

EDUCATING GIFTED CHILDREN

REVISED AND ENLARGED EDITION

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Introduction

When the first edition of *Educating Gifted Children* was published, in 1957, we felt as though we were pioneers in a new land. At that time it was possible to survey the work being done on behalf of talented children and to report practically all of the significant activity in this area.

Since that time there has been an enormous surge of public interest in what the schools are doing for the gifted. Educators have devoted so much of their attention to gifted children and youth that it is no longer possible to report everything of consequence in a single book. The reasons for this increase of research and attention to programs for gifted children are several, including a shortage of trained manpower in certain areas of national importance, as well as the growing interest of psychologists and educators in certain types of talent.

The revised edition of *Educating Gifted Children* is an account of how educators and research workers have responded to the pressures generated by themselves and others for improved education for the gifted. The last four years have witnessed a tremendous expansion of research on educational problems of such children and an expansion of the number and quality of educational programs designed to correct past deficiencies. Many of the issues that were unsettled at the writing of the first edition are now settled and new issues have arisen. For example, the necessity of improving and differentiating in-

struction for gifted children is now fairly well settled. The problem is no longer whether to do something; the question now is that of finding the most appropriate means for a given community.

Research has increased our knowledge of areas where previously we were rather ignorant. One such area is that of creative thinking, and a second that of motivation. Both of these problems have been extensively researched in the past few years. At least we know the major dimensions of the problem and some of the answers more clearly than we did before.

This book reports the new knowledge and improved educational programs for the gifted. The basic issues are described in the first chapter. What is known about the nature of giftedness is discussed in the second chapter. These two chapters lay the foundation for much of the rest of the book.

New chapters have been added on educational objectives and curriculum, creativity, development of non-intellectual talent, and procedures for research and evaluation. Chapters on identification, administrative provisions, school practices, motivation and guidance, teaching methods, the role of the family and community have been substantially revised in the light of new research and new educational programs.

This book, like its predecessor, is written to serve as a guide and stimulus to individuals and groups in the education profession to community agencies, as well as to interested laymen who are concerned with improving the scope and adequacy of the education of gifted children and who may be making plans to inaugurate special provisions for them in the schools of their community.

This book is also designed to be used as a textbook in college courses on the education of gifted children and for teachers in service, as well as in regular classes and workshops. The book may also be used to help prospective teachers understand this very important segment of the school population with whom they will soon be dealing.

The Quincy Youth Development Project has figured largely in the writing of this book, as it did in the first edition. The book also draws freely from other projects and programs that

have been established in various communities and by various organizations.

We wish to take this opportunity to thank the many editors of books and scientific publications and the publishers of textbooks who have given their permission to use material in this book. We would especially like to thank the National Society for the Study of Education, the *Review of Educational Research*, *The Superior Student*, *The American Psychologist*, McGraw-Hill Book Company, Science Research Associates, Educational Testing Service, Simon and Schuster, and Longmans, Green, and Company for their kind permission to use excerpts from their publications. And again we would like to thank Jack Kough for chapter xi, which is taken unchanged from the previous edition.

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Gifted Children in American Education

The great and growing attention to gifted children in American education is due to a combination of ideology and the reality of social need.

The ideology is the American dedication to the unique value of the individual and to the desirability of developing his abilities, whatever they are, along socially valuable lines.

The reality is the shortage of trained manpower during the postwar economic boom. Since 1950, several analyses of the development and of the loss of intellectual talent have shown that, in spite of the improved holding power of schools and colleges for talented young people, the United States still fails to develop a great deal of its talent. Early in the fifties, Dael Wolfe, of the Commission on Human Resources and Advanced Training, said,

College graduating classes could be twice as large as they currently are, and with no loss of quality. The potential supply gets drained off, in large or small amounts, all the way through the educational system. Practically all potentially good college students enter, and most of them finish high school, but after high school the loss is large. Fewer than half of the upper 25 percent of all high school graduates ever earn college degrees; only 6 out of 10 of the top 5 percent do. Society fails to secure the full benefit of many

of its brightest youth because they do not secure the education that would enable them to work at the levels for which they are potentially qualified.¹

In a study made for the National Science Foundation at the close of the past decade, Donald Bridgman found some improvement, but there was still a considerable loss of talent. He stated that, of youth in the top 30 per cent of intellectual ability, two-thirds now enter college but only 45 per cent graduate from a four-year course.²

BASIC ISSUES AND PROBLEMS

Increased attention to the discovery and development of talented youth is becoming a regular part of the educational system and will contribute permanently to the betterment of education and of society.

Concern for the gifted has already strengthened the dimension of excellence and achievement in the school program. Probably no other society in the past or present has done so much toward the discovery and development of such talent. Even Athens at the height of her creativity in the fifth century B.C., Florence in the Renaissance, and England in the sixteenth century reached these peaks without the talents of a great mass of people submerged in slavery or hopeless poverty. Only when the facts of the development of talent in present-day America are compared with what might be, and what the democratic ideal suggests they ought to be, does the record look inadequate.

The development of ability requires education, and Americans have great faith in the power of education to bring out latent excellence. Their expectations are as clear a mandate from society as the schools are likely to receive.

Americans have discovered, too, that although there are children with remarkable talents in economically underprivileged families, these talents do not flourish in a neglectful family or a barren community environment. Many families either cannot

¹ Dae] Wolfe, *America's Resources of Specialized Talent* (New York: Harper, 1954).

² Donald S. Bridgman, "Where the Loss of Talent Occurs and Why," *The Search for Talent* (Princeton, N.J.: College Entrance Examination Board, 1960), pp. 30-45.

recognize talent or do not know what to do with their gifted children. A family can be excused for this—a school cannot. However important the school may be to the gifted children whose families are able to recognize and encourage talent, it is absolutely essential to those whose families are either unable or unwilling to help. It is the school's business to recognize and develop talent whether or not parents take any responsibility. For it is in the school, as the major community institution for helping gifted children, that two indispensable programs can be carried out: first, simply the discovery of talent, and then, the enrichment of experiences and essential training for most kinds of talent. Our democratic ideal compels us to seek out and promote the talented but underprivileged child or youth.

If talent is to be systematically discovered, developed, and utilized, society as a whole has certain general responsibilities. The democratic ideal of equal opportunity for all does not mean that all people should have identical opportunity. Rather, it means that all people should have the opportunity to make the most of whatever abilities they have. The girl with a beautiful singing voice should have more opportunity to develop this talent than the girl with an ordinary voice; but this second girl should have ample opportunity to develop the most promising of her abilities, whatever they may be. This principle also means that opportunity should be commensurate with ability, that with high ability should go greater opportunity.

It is not sufficient, however, simply to offer opportunity. Many able children will not accept it until they are shown the advantages of these offerings. A democratic society should not have a *laissez faire* policy with respect to the gifted. It should actively seek them out, wherever they are, and attempt to stimulate them to take advantage of the educational opportunities that are available to them.

INDIVIDUAL DIFFERENCES

A program of education for the gifted does not necessarily mean that other children will receive less attention in the schools. A good program for the gifted will do what good education does for all kinds of people. It will fit the individual, whatever his

abilities, and help him make the most of them. This essential quality is described with great cogency by John Hersey in the following essay on education for talented boys and girls:

It is time to restore perspective to our views on help for the gifted. Educational practice is a set of slow pendulums. Just now the gifted child is in fashion—and in a little danger, too. School systems all over the country, sensitive to fierce pressure from our society for technicians and experts of every kind, are rushing headlong into programs to produce highly efficient, useful, skilled, dependable, ready-made cogs for a scientific economy.

The work of the Manhattan Project on the atomic bomb seems to have convinced many people that all that is needed to unlock supreme mysteries, such as those of atomic energy or cancer or talent, is an act of Congress, or the banding together of many vast agencies and the expenditure of a huge sum of money.

But the job of freeing talent does not lend itself to this kind of attack. Talent is elusive, fragile, manifold, fast-moving, luminous, tantalizing, and incredibly beautiful, like aurora borealis on a cool September night. Who would give a weatherman a bag of money and tell him to go out and catch some northern lights?

The danger is that a "crash-program" approach to the problem of our country's need for talent may (a) not release talent, and (b) therefore produce disappointment and revulsion which would cause the pendulum to swing away from special help for the potentially talented.

The perspective that is needed is this: Our uncertainty about exactly how to develop talent is only one part of the greatest unsolved problem in American education—the problem of how to help every child realize his maximum potential; the problem, in the lingo of the trade, of individual differences.

Much of the literature on the gifted is written as if there were no other children. "Upon the creative imagination and inventive genius of these children depends our progress," one handbook on the gifted declares. Surely the progress of our civilization depends on much more than those two things, and surely programs for discovering and freeing talent must be developed in the context of education for all.

The Harvard committee which wrote *General Education in a Free Society* stated, as aims of education for all, the fostering of four abilities: "to think effectively, to communicate thought, to make

relevant judgments, to discriminate among values." The aims of the gifted are the same—with perhaps an additional emphasis on their putting these abilities to the service of society. Insight and energy are the operative gifts of the people we call talented, and they are, too, the qualities which may enable our highly talented citizens to communicate, above all, the most viable thoughts, judgments, and values of their time, and to communicate them in such a way that the talented will not be isolated in society but will take part, along with the rest of our citizenry, in man's endless, painful drive for progress.

At this moment in our drive for progress there are three school nightmares on the country's conscience, and it seems likely that none of them will be exorcised before we have made a great deal of progress on this matter of individual differences. They are: racial integration, the teacher shortage, and our poverty of talent.

Like all nightmares, these three are hard to discuss in public; that is to say, it is hard to face in public, and perhaps even in private, the real, deep truths about them. . . .

It seems to me not at all certain that higher salaries, improved status, and more luxurious working conditions will really solve the teacher shortage. Of course we must have these things. But perhaps we need to remember that teaching is, in the old, pure sense of the word, a vocation, something to which one is called by the voices of conscience and idealism. We could pay teachers \$64,000 a year, and we would still not have changed teaching from a function of service to a function of self-interest.

What is needed is not that young people should want money but that they should want to teach. What will make them want to teach? Other young people wanting to learn will make them want to teach—young people voracious for understanding and knowledge and skill. The law of supply and demand holds in the realm of human needs.

And what will make young people want to learn? My guess is that young people, gifted, mediocre, and slow, will want to learn when they come to feel that they can bring their maximum potential to fruition and that they can then work to the very limit of their powers for the benefit, not only of themselves and their families, but also of mankind.

Peremptory demands from industry and the military establishment for scientists and technicians, sorely needed for defense, does not bring this larger end. The word "defense" is a euphemism; read,

instead, the word "death." Is this not a clue to the shortage of science teachers and to the shortage of youths opting a science career?

The problem of the teacher shortage, in other words, is not merely one of salary and of P.T.A. committees to look for housing; it is a problem of national leadership, and of our country's place in a shrinking world, and of what lies in the separate hearts of our individual citizens.

To speak of another of the nightmares, for most Americans the most harrowing of the three: Racial integration may be brought about, mechanically speaking, by law enforcement, but true integration, north and south, will not come into being until we have learned, in our schools and private lives, to devote ourselves to the release of the maximum potential of each individual. Only then can we stop thinking that a given child is Negro, or that he is white; and begin thinking that he is unique, that he is miraculously himself and no one else.

Of course the talent shortage stems directly from our failure, so far, to find solutions for the problems of individual differences that are applicable on a widespread scale. Much as scientific methods may have advanced educational research, they are a definite hindrance in the search for these solutions. We have tended in our schools, in my opinion, to try to carry the scientific spirit too far too fast, for education is still essentially (and fortunately) a haphazard matter of human relationships. In our efforts to be scientific, we categorize; we speak of normal and exceptional children, for instance, which ends by turning a clubbed foot and an I.Q. of 150 into equivalent physical handicaps. Can there be anything more inaccurate, more harmful indeed to individuality, than to use the word, and the concept, "homogeneous"? What about *group* tests? Norms? Standard deviations? Normal curves? Annual promotions? The age lock-step? Grades?

The worst of it is that our society brings pressure to bear on our schools to produce, not excellent and variable individuals, but categories—so many engineers, so many chemists, so many physicists. The logical conclusion of the demand by society for well-trained and docile categories of talent is that at some point an I.B.M. machine decides who shall fit into what category: who shall be a lawyer, who a doctor, who a beggarman, who a thief.

Far short of that conclusion is a real and present danger: that in the clamor for scientists we will forget other terrible current short-

ages, such as that of poets—poets, I mean, in the largest sense, voices to remind us of our aspirations.

The problem of individual differences is basically political. It seems to me to be the essence of the struggle in the world for men's minds. We in America stand for individual freedom, but we have a long way to go before we realize it fully; perhaps we will always have a long way to go, for true freedom must surely be infinite. At any rate, a society in which citizens were alert to individual differences in each other, and encouraged them and rewarded them, could scarcely help being democratic. A society in which each person felt unique, and useful because of his uniqueness, might conceivably have less and less, rather than more and more, inmates in its mental institutions. The effects on the mass media of communication, particularly on television, radio, and moving pictures, of a climate in which individual differences were fully acknowledged, would be electrifying, for there would be no place for canned culture in such a climate. The role of the teacher would necessarily be *more challenging, more revered, and better rewarded, for every child would hunger for learning and understanding*. This is an age of huge explosions; it is a time in which each man, woman, and child needs and deserves a sense of dignity, a conviction of individuality, and the strength that comes from having a worthy place in society.

I believe that to unlock human gifts on a large scale, we must think less in *picayune terms*, less in terms, let us say, of "desirable enrichment practices in the ordinary classroom," and more in these larger terms—in terms of the real meaning of potential freedom for the individual. Surely this freedom can be found nowhere but in his uniqueness.³

THE PROBLEM OF DEMOCRATIC VALUES

In a democracy with egalitarian tendencies, like the American, there are a number of questions clustered about the education of the gifted that need to be answered with some clarity.

One question which lies back of many objections to an educational program for the gifted is whether the ablest might not re-

³ John Hersey, "Wanted: A Larger Frame of Reference," in *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II. Prepared by the Yearbook Committee, Robert J. Havighurst, et al., and edited by Nelson B. Henry. Chicago: National Society for the Study of Education, 1958), pp. 4-9.

pay society for their educational advantages by misusing their abilities and their power. Whenever the ablest youth of a society are given special treatment to enhance their abilities, there is a risk that this elite will refuse to serve the society but will work for their own selfish purposes.

Another objection to the development of a talented elite is that this group may grow out of touch with common people and fail to understand the needs of the society, even though their intentions are good.

Back of the resistances to special programs for the gifted is a tendency on the part of some people to "leave well enough alone." No one knows what the effect on society might be of singling out a small proportion of youth and giving them special attention in the educational system. A segment of American public opinion says, "Treat everybody alike. Give every child a good chance, and every child an equal chance. That is the responsibility of the public schools. It is up to the child and his parents to make much or little out of what is offered him." These sentiments sound good to American ears.

Taxpayers who have children are likely to feel that their children should get everything other people's children get. Therefore they tend to look askance at a program that spends more money on a few "gifted" children than is spent on their own "average" children. On the other hand, people tend to accept the idea of spending public money on the handicapped—they "deserve it," as it were. Life will be difficult for a crippled person, or a blind or deaf or slow-learning person. These children should be given extra help to prepare them for life. So runs the reasoning of the average taxpayer. But the gifted child has an initial advantage. Why should he be given more help in school than the average child, when he can learn so much more easily?

THE PROBLEM OF IDENTIFYING REAL TALENT

Another set of disquieting questions is asked by people who doubt either that there is such a thing as innate talent or that our methods of discovering and identifying talent are adequate.

One objection to special programs for the gifted is that talent

as ordinarily defined and measured is heavily concentrated in urban white middle-class groups. Consequently, such programs will tend to segregate children of these groups from rural, colored, and working-class children. It may be argued further that a child's abilities are determined more by social factors (home and community background) than by biological factors. If this is so, a program for the "gifted" is merely a program that increases advantages for children who already have superior social backgrounds. It might be better to spend the same amount of money to enrich the social environment of children from underprivileged families, with the expectation that some of them will develop their potentialities to the fullest.

Another skeptical element is introduced by the proposition that ability of one kind or another may not be as important a factor in a person's total achievement as his motivation. The children who will respond best to a program for the "gifted" are those with high motivation rather than high ability.

Finally, it may be argued that if present instruments and methods of discovering the gifted are imperfect, the decisions based on these methods will not be justified.

BASES FOR A PROGRAM FOR THE GIFTED

But against these questions and objections there is one powerful argument—the principle of educational opportunity for all requires a fitting of opportunity to the individual's needs and abilities. It is our belief in the unlimited value of the individual that commits us to a policy respecting and building upon individual differences. What were objections become cautions against the misuse of these programs. And cautions which we may well heed.

When this deeper meaning of our democratic ideal is made the basis for practice, it becomes the duty of the schools to maintain an intensified social awareness and exercise a crystallized social responsibility. It becomes a mandate that schools strive to inculcate a sense of human accountability, not only to the system that fostered them, but to the world at large. Furthermore, the schools must maintain a free and open approach to the definition of

talent; every effort should be made, when talent is discovered, or even suspected, to cancel the handicaps suffered by those from underprivileged segments of the population. In the actual school programs, the dangers of segregating talented children should be considered gravely.

PROGRAMS FOR THE GIFTED

America's interest in the gifted in the twentieth century follows a lengthy tradition; every culture has been interested in the talented and has looked upon men of genius as having a touch of something superhuman.

There have been programs for the gifted in American school systems since the nineteenth century. Before 1870, St. Louis established its program for promoting children of high academic ability on a flexible basis, allowing them to complete eight grades in less than eight years. In the "Cambridge double-track plan," beginning in 1891, the abler pupils were put into special sections which did six years' work in four. In 1900, New York City started the rapid-progress classes which are now widely used in that city to enable bright children to do the three years' work of junior high school in two years.

Before 1900 there was also some experimentation with homogeneous grouping of children, and rapid progress for children in the brighter sections. In general the early plans for special treatment of the gifted involved *acceleration*, or rapid progress through school, rather than *enrichment* of the child's experience without unusually rapid promotion.

While there was this kind of sporadic interest in the education of the gifted before 1930, it was definitely a minor interest, compared with the massive effort to expand American education and to make it serve *all* children. The emphasis in American elementary schools and to a lesser degree in secondary schools between 1900 and 1930 was on numbers. Quality did not suffer, but it did not improve very much, either. There was not much emphasis on the development of special abilities, or on children with intellectual superiority. Nevertheless, the fundamental work was being done on which the recent programs for educating the gifted were to be built.

CONTRIBUTIONS OF THE SCIENCE OF EDUCATION TO THE GIFTED

The past four decades of the present century saw the development of intelligence tests useful for the identification of gifted children, as well as methods of studying growth—physical, mental, and social—which permitted the scientific study of the gifted. Two psychologists, Lewis M. Terman and Leta S. Hollingworth, took the lead and did much of the work on which present educational procedures are based.

Terman, through his longitudinal study of gifted children, has provided a store of essential facts about physical, mental, and personality characteristics of talented people. His conclusions, based on studies begun in 1921 of approximately 1,500 children with I.Q.'s of 140 and higher, establish that these children, as a group, are superior in all the traits studied and that their superiority has continued so far throughout their adult life.

Leta Hollingworth was concerned especially with the extremely gifted and gave us a series of enlightening case studies of children with I.Q.'s above 180. She inaugurated and carried through a series of curriculum experiments with gifted children, and she advocated early identification of them and special grouping as the best educational procedure in large school systems.

Both Hollingworth and Terman studied the extremely gifted in the intellectual sense—the upper 1 per cent of the population. It remained for Paul Witry to take the lead in broadening the concept of giftedness to include talent in the arts and to consider at least those children in the upper 10 per cent of the juvenile population. Thus, Witry showed that the education of gifted children was possible for every size of community and school. He advocated no one type of educational program for the gifted but proposed that different communities and schools go about the matter in their own ways.

These are only three of a pioneer group whose names will be mentioned in connection with their work at other points in the chapters that follow.

TRENDS SINCE 1930

The principal method of serving gifted children in 1930 was a combination of homogeneous grouping with diminishing ac-

celeration. Homogeneous grouping usually meant a grouping of the top third in ability and thus was not a highly selective procedure. Ability grouping declined in popularity after 1930. Several critical studies of homogeneous grouping indicated that the high ability groups were not achieving as close to their ability level as were the average ability groups.

Gradually there appeared a number of programs in which enrichment rather than acceleration was the aim and which were designed for children in the upper 2 to 5 per cent of intellectual ability. Hollingworth set up a school with special classes for the gifted, the Speyer School in New York. In Cleveland the Major Work Classes were started.

During the 1930's and 1940's there were a few programs providing enrichment in special classes for the gifted, and there was increasing attention given to enrichment for able pupils in the regular classroom. Along with this went a good deal of attention to the individual with a very high I.Q.—one in a thousand—with efforts by school people to work with parents in planning special individual programs for such children.

At the close of World War II there was no sign of an impending wave of interest in the gifted. A few leaders were talking about it. Pressey was publishing his reports on the values of acceleration. The Educational Policies Commission of the National Education Association put out a report on *Education of the Gifted* in 1950 which proposed a conservative increase of attention for brighter pupils, without special classes or special grouping of the gifted.

Then came the report on *The Gifted Child*, edited by Paul Witte for the American Association for Gifted Children, in 1951. This served to spark an explosion of interest and activity.

No doubt the postwar shortage of trained manpower combining with the scarcity of new young adults due to low birth rates in the 1930's had a powerful effect on educated public opinion. The need for trained talent was great, and the loss of talent was dangerous. Dael Wolfe's report on *America's Resources of Specialized Talent* was published in 1954, and documented the need for identification and training of larger numbers of abler youth for work of a technical or professional nature.

Characteristic of the postwar interest in the gifted was an expanded definition of this group, to include 10 or 15 per cent of the age group instead of only 1 or 2 per cent, which had been the tendency before 1940.

By the mid-fifties a number of experimental programs looking toward the more effective identification and development of talented youth were under way. Teachers College of Columbia University set up a program for working with school systems to develop programs for the gifted. Portland, Oregon, public schools started a city-wide program. The Committee on Human Development of the University of Chicago began to work with the schools of Quincy, Illinois, on a program for the gifted. A survey of programs for the gifted, published in 1955, reported on some forty active programs which were rapidly finding imitators. At about this time some of the state departments of education commenced to promote work with gifted children, notably Oregon, California, New York, Ohio, and Florida.

Then came the National Defense Education Act of 1958, which provided funds for (a) training school counsellors for work with the gifted, and (b) educational experiments on behalf of the gifted. The state of California in 1958 provided a hundred thousand dollars for research on curriculum adjustments for the gifted. The National Education Association set up a Project for the Gifted, as did the North Central Association of Colleges and Secondary Schools, and the Southern Regional Council on Education.

Two of the great foundations turned their attention to education for the gifted. The Ford Foundation gave support to the Portland, Oregon project, and to projects for acceleration of gifted students into college. The Carnegie Corporation supported the Inter-University Committee on the Superior Student, as well as the North Central Association program for superior high school students.

Fliegler and Bish summarized trends in the education of the gifted in the decade of 1950 as follows:

1. Greater concern with curriculum content based upon the conceptual level of the gifted.

2. Expansion of the previously narrow interpretation of giftedness through efforts to measure special abilities and creativity.

3. Increased acceptability of some forms of acceleration as administrative procedures.

4. Development and expansion of college and university programs at both undergraduate and graduate levels for teachers specifically trained to work with the gifted, and special programs for retraining teachers in science and mathematics.

5. Sponsorship of comprehensive experimentation by U.S. Office of Education and such organizations as the Ford Foundation and Carnegie Corporation as well as intensification of research activities among local schools and by doctoral students.

6. Recognition and determination to realize the underdeveloped human resource potential among members of the lower socio-economic groups, Negroes, and women.

7. Direct action by state and national government through distribution of funds for program development and scholarships.

8. Concern with special programs at the local level which have a variety of approaches but substantially represent an interest in intellectual as well as social needs of the gifted.⁴

QUESTIONS FOR STUDY AND DISCUSSION

1. Summarize and evaluate the arguments against a special educational program for gifted children.

2. Contrast the decades 1930-40 and 1950-60 in their attention to education for the gifted.

3. Summarize and discuss the principal contributions of Lewis Terman, Leta Stetter Hollingworth, and Paul Witty to the movement for education of the gifted.

4. How did the manpower shortage of the 1950's affect the movement for education of the gifted?

5. How can a program of emphasis on the education of gifted children be justified in a democracy?

6. What dangers, if any, are there in emphasizing the need for trained manpower as a reason for paying special attention to the gifted?

7. Why were the contributions of psychology—development of tests, study of individual differences—so important to development of interest in education for the gifted?

⁴Louis A. Flegler and Charles E. Bish, "Summary of Research on the Academically Talented Student," *Review of Educational Research*, XXIX (1959), 408-50.

Who Are the Gifted?

Let us look at a thousand children who are born in a typical American city in a given year. Hidden among them are boys and girls who have the possibilities of becoming great scholars, artists, musicians, and business and political leaders. Perhaps two hundred out of the thousand have the potentialities that justify calling them "gifted children."

The problems of educating these two hundred children are the subject of this book. Schools, communities, and parents should give special attention to the development of their abilities so that these children may become constructive and happy adults and so that society may benefit from their abilities more than it now does.

DEFINITION OF THE GIFTED CHILD

We shall consider any child "gifted" who is superior in some ability that can make him an outstanding contributor to the welfare of, and quality of living in, society.

Within the broad area of giftedness we shall make an important distinction between the extremely gifted child and the solid, superior child. Children in the upper one-tenth of 1 per cent will be called the "first-order" or extremely gifted children. The remaining children in the upper 10 per cent in a given ability

will be considered the "second-order" gifted children. Educating the second-order gifted children is quite a different problem from that of educating the first order. Educators, however, sometimes confuse the two problems by subsuming both under the same heading of "educating gifted children." The first-order gifted child is rare. Many teachers may not see more than one or two of them in a lifetime. The problems of educating the first-order gifted child will be dealt with briefly in the last chapter of this volume. The problem of educating the second-order gifted child is more pervasive. In general, the average school should be able to do a good job of educating the second-order gifted child without undue strain. This book is addressed to the *how* of doing this job.

The term "gifted children" will be used to refer to the second-order gifted children. The terms "talent" and "ability" will be used to refer to any of the variety of abilities described below. The term "genius" will not be used except to refer to the person who is far superior, the one in a thousand.

The kinds of abilities to be considered in the definition of gifted children are various. For example, such a program might seek to develop the following variety of gifts and talents: (a) general intellectual or academic ability (ability to think abstractly and do other kinds of relational thinking) and its various components, such as reasoning, verbal skill, mathematical skill, and spatial imagination; (b) ability in such complex areas as science, social leadership, and human relations; (c) talent in mechanics, crafts, and the creative arts, such as graphic art, music, creative writing, and dramatics. Any ability that is both constructive and complex could be included. This would exclude only some simple mechanical abilities, such as finger dexterity, a useful ability important to a person in typewriting or wrapping packages, but a skill that does not mark a child as gifted unless it is combined with other abilities into something more complex.

As a working definition for a practical program of selecting a group of gifted children in a community of medium size, those children may be considered "gifted" who are in the top 10 per cent of their age group in one or more of the areas of talent listed above. Such a definition implies that a program for educat-

ing gifted children will be concerned with a considerable group of children, probably as many as one-fifth of the whole population. This was found to be the case in Quincy, Illinois, where a program of discovery of talented children covered the areas of intellectual talent, artistic ability, and social leadership.

A total of 22 per cent of the children were selected when the procedure was to take the top 10 per cent in the areas of intellectual ability, drawing ability, and social leadership. In Portland, Oregon, when the top 10 per cent were taken in seven areas, the number of selected children was 32 per cent of the total.

The definition of the gifted child recommended here is admittedly and designedly a broad one. It is broad in the sense that it includes many talents and encompasses a relatively generous proportion of children in each area of talent. The broader the definition, of course, the greater the opportunities for helping many gifted children. At the same time, the broader the definition, the greater the possibility that the school may seem to "waste" some of its efforts on a few children who turn out in the long run to be not especially gifted. In other words, the school may possibly disperse its efforts if it defines giftedness broadly.

A narrower definition of talent could be and is used by some schools. It might include only one area of giftedness, for example intellectual ability, and only the top 1 per cent or less of the children of a given age group. Thus, in a group of one thousand children, only ten intellectually gifted children, at most, would be included in such a special educational program. This is a "safer" group to work with, since the schools can be almost certain that they have included only gifted children in the group and that their educational efforts will certainly be visible. The broader definition, however, is certainly worth the slight risk of wasted effort, because the gains to be obtained by giving special educational opportunities to a large number of gifted children far outweigh the possible wasted efforts spent on the few children who turn out to be not gifted after all.

In general, this book follows the theory that there is an in-born and unequal potential in every person for intellectual and

other forms of performance, and that the social environment gives stimulus and opportunity for the development of the in-born potential abilities. The actual kind and level of talent displayed by a child is the result of a combination of what he was born with and what the social environment has given him.

MANIFESTATIONS OF GIFTEDNESS

Since there are so many facets to giftedness, it is necessary in planning an educational program to have some understanding of the nature and significance of each.

Intellectual ability.—An outstanding manifestation of giftedness is intellectual ability, which has several aspects. One aspect is the ability to use words, to comprehend their meaning, to read and write effectively. A second is the ability to use numbers, to compute rapidly and accurately. The scientists who have studied intelligence are not agreed on whether intellectual ability is one thing, or several. One school of thought favors the idea of a single, central ability, called general intelligence, with related special abilities, such as ability to visualize objects in two or three dimensions, and ability to think in terms of numbers. Another school of thought prefers to think of intelligence as consisting of as many as six or seven different abilities which are interrelated. To the ones already mentioned they add the ability to remember, and the ability to reason inductively.

In practice, the two schools of thought are not far apart. They agree that intelligence should be measured with tests that have a variety of types of problems. They agree that people with high intelligence may differ from one another in that one person may be very high in certain special abilities while another person may be very high in other special abilities.

Intelligence, or intellectual ability, is basic to other talent, such as those in the fine arts, social leadership, science, and mechanics. It is seldom, for example, that a person highly talented in the fine arts is not also well above average in intellectual ability.

Creative thinking.—This is another important aspect of giftedness. It is a complex talent made up of many abilities, such as the ability to recognize problems, to be flexible in thinking, to

invent and originate ideas or products, to find new uses for old objects and materials.

Scientific ability.—Scientific ability is not a primary mental ability in itself but is compounded of many skills and attitudes. Some of them are skill in using numbers and algebraic symbols, ability to reason arithmetically, a curiosity about the natural world, and an ability to use a particular kind of thinking called "scientific method."

Social leadership.—It is important to find youngsters who have leadership ability—the ability to help a group reach its goals, to improve human relationships within a group, and to achieve prominence by individual effort. Children with such ability will take their places in the adult world in a few years to fill positions of leadership in business and industry, labor unions, professional organizations, community groups, government, and international agencies.

Mechanical skills.—Mechanical skills might be called the "craft skills." They are closely related to talents in the fine arts as well as to scientific and engineering talents. This category includes manipulative skills, spatial ability, and ability to perceive a visual pattern, details, similarities, and differences.

Talent in the fine arts.—Artists, writers, musicians, actors, and dancers produce forms, colors, patterns, and symbols which are aesthetically satisfying to many people. Many artistic mediums are available to the child with talent in the fine arts. Some children are proficient in more than one medium or area of artistic expression.

GIFTED CHILDREN AS A GROUP

Intellectually gifted children, *as a group*, are above average in all areas in which they are measured. The concept that intellectual superiority is offset by other kinds of inferiority has been thoroughly disproved by research studies such as the monumental one by Terman.¹

¹Lewis M. Terman *et al.*, *Genetic Studies of Genius* (Stanford, Calif.: Stanford University Press), Vol. I, *Mental and Physical Traits of a Thousand Gifted Children* (1925); Vol. III, *The Promise of Four* (1930), by Barbara S. Burks, Dortha Jensen, and Lewis M. Terman; Vol. IV, *The Gifted Child Grows Up* (1947), by Lewis M. Terman and Melita H. Oden; Vol. V, *The Gifted Child at Mid-Life* (1959), by Lewis M. Terman and Melita Oden.

A bright child usually has a cluster of superior abilities based on his intellectual ability. For example, he probably achieves well in all academic areas but particularly well in reading, language, and in areas requiring abstract thinking or verbal ability. The interests of gifted children run more toward reading and other intellectual pursuits than do those of average children. In such areas as social characteristics, physical characteristics, and health, the gifted child is above average as well.

Individual gifted children are not equally superior in all areas. Every teacher can point from her own experience to exceptions to the above group description. She may have known, for example, a very bright child who was physically handicapped, or she may remember that ten or more years ago she had a wonderful young artist in her class who was a social misfit. Often such exceptions are remembered and talked about long after the many, many gifted youngsters who follow the more usual patterns are forgotten. This tends to nourish misconceptions about gifted children. It should be kept in mind that, *as a group*, gifted children are above average in almost all areas and are superior in many of them.

TWO CASE STUDIES

It is often easier to devise, in an abstract way, a definition of a thing than it is to apply the definition in actual practice. How does a broad definition of giftedness work out when applied to a real situation in a school or community? Is it practicable to define giftedness broadly? In order to answer these questions, let us look at two gifted children as examples of the kinds of children included under the definition of giftedness used in this book.

Jane.—Jane was obviously a gifted child, the kind who would probably stand out in any school system. Her school cumulative record contained a summary description of her abilities. These test records said, "Here is a gifted child." Data such as these need to be carefully studied. The test scores placed Jane in the upper 10 per cent of her age group in intellectual ability. Her art ability showed up in art test scores, and teachers noted her

writing ability. Her academic achievement was roughly commensurate with her intellectual ability.

The seventh-grade teacher wrote the following comment about her. "Jane is a very bright girl. She is especially good in art. However, if she is working on anything else, she does not want to be bothered. She reminds me of a research worker who likes to take on a project, get in a corner by himself, and work. I told her the other day that I thought she might end up being a scientist." The teacher also reported that Jane was an avid reader, particularly in literature, and that she loved to draw. Her teacher noted, however, that she had some fairly bad work habits.

When Jane was in the fourth grade, her mother was questioned about the girl's interests at home. The mother responded that Jane liked to draw or paint, particularly pictures of girls and horses; that she read books "omnivivorously"; that she liked to play indoor games with dolls and cowboys and other make-believe games. Outdoors she liked to climb, play tag or wild horses. She played the piano, loved to sing, and wanted to take dancing lessons. She liked to tell stories, usually of the fairy-tale variety. She sometimes memorized songs and poems. She wrote stories or poems "which are usually garbled versions of what she has read." She had a number of pets—"a dog, rabbits, a turtle, or caterpillars in season." Jane tended to dominate any group of which she was a member, and this sometimes made her somewhat unpopular. For this reason, she preferred her two close friends. Jane had said she would like to be an actress because she liked to do things in front of people. Her mother said she would like to channel her child's interests toward something that could be of more value than acting but had done nothing in this direction other than bring her library books.

When Jane was in the sixth grade, she regularly attended an art class on Saturday mornings. She was habitually tardy and was not able to follow through on the drawing assignments that were given the other children. For example, when she attempted to draw the stuffed birds or animals that the other children were drawing, she very easily became discouraged and returned to what she drew most readily—horses. She drew

Mike lived in a marginal neighborhood in an old two-story frame house covered with green asbestos-shingle siding. His parents did not have very many interests. The father liked to tinker with cars. He usually worked as a helper in a garage or in a trucking company but changed jobs a good deal. The mother needed to take a job in a factory in order to help support the family, since the father was so often out of work. The mother had attended high school but had not graduated. The father apparently had not had more than grade-school education. Both parents came to school for P.T.A. and social affairs occasionally. They had been at school once or twice to talk over problems about Mike's work at school.

Mike had been invited to attend painting classes when he was in the seventh grade. For a long time he did not come. Finally, one of the teachers asked him whether he was ever going to the painting class. He said that he would try to make it soon. The teacher then encouraged his mother to send Mike to the next session. The next Saturday he came out to the class and did a very creditable job with his painting, according to the instructor. When he was finishing up his painting, he surveyed it and said, "Well, not bad for the first picture I ever painted in my life." At the end of the year, however, the art teacher reported that she was afraid she had never reached Mike in the art class. His attendance was too spotty, and he would not settle down to work.

Contrast between Mike and Jane.—Mike presents many contrasts to Jane. His abilities were less visible than hers. His social and personal behavior led the teachers to different and sometimes opposite reactions. Some saw great potentialities in him, but others were irritated and confused by his erratic social behavior. Mike's family was a hindrance to the development of his abilities because of the inconsistent discipline and spotty stimulation they gave. Mike's interests did not push him to reach out for enrichment as Jane's did, and his family did not consistently help him reach out either. Some teachers and other adults tried to help him but found him hard to reach.

These cases illustrate how giftedness as defined in this book will include quite different children in an average community.

Some children clearly and obviously fit the definition. Other children are more of a puzzle because so many detracting factors interfere with the unfolding of their talent. Should they be included or not? Some children are favored with an environment that emphasizes achievement and development of a variety of talents. Others must struggle with an environment that is indifferent or hostile to the development of talents. A good deal of time and energy must be poured into the development of the talents of some children, such as Mike, with only a fair probability that the effort will show results. Other children are sure bets, so to speak. But both kinds need more attention from educators if their abilities are to be discovered, developed, and utilized for their happiness and for the benefit of society.

RESEARCH ON THE NATURE OF GIFTEDNESS

The study of children with high intelligence has been built up in the United States during the past forty years by such people as Terman, Wittey, Hollingworth,² and Strang.³ They have been able to tell us a great deal about the nature of giftedness in the intellectual area.

These and other researchers have found that intelligent children are also generally healthy, large for their age, and well adjusted socially. On this latter point, of social adjustment, Hollingworth is inclined to believe that the child of first-order intelligence, the one in a thousand, has difficulty in getting along socially with his peers. This matter will be discussed in chapter xv.

The studies of gifted children must be interpreted with some caution because in most cases they do not deal with *all* of the highly intelligent children in the population from which the study group was drawn. For instance, Terman discovered about 1,500 high-I.Q. children in California schools in 1921 between seven and seventeen years of age. But he must have missed some others who were equally intelligent. He could not test all the children of a given age in California schools but had to rely on nominations by the teachers together with the device of testing

² Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture* (New York: MacMillan Co., 1926).

³ Ruth M. Strang, *Helping Your Gifted Child* (New York: Dutton, 1960).

the youngest child in each class. He said that this method failed to catch some 10 per cent of the children with I.Q. of 140 or higher. His method probably favored the discovery of children in urban rather than rural areas.

Probably the bright children not discovered by Terman and others were mainly from working-class homes. Furthermore, there is reason to doubt that the usual verbal tests of intelligence are as fair to children of working-class homes as they are to children of middle-class homes. Thus there may be a considerable number of children with high innate intelligence who for one reason or another are overlooked in the usual studies of gifted children. Consequently the conclusions which are drawn from existing studies should be kept open for possible revision especially where the inclusion of more children from working-class homes might affect them.

GIFTEDNESS IN THE EARLY YEARS

Intellectual talent usually shows itself in reading and speaking, rather than in spelling and handwriting. Forty-five per cent of Terman's group of very bright children were already reading when they entered school. Terman says, "One of our gifted girls demonstrated by test that she could read almost as well at the age of twenty-five months as the average child at the end of the first school grade."⁴

These children learn very rapidly in school. Terman and Oden said, "It is a conservative estimate that more than half of the children with I.Q.'s of 135 or above had already mastered the school curriculum to a point two full grades beyond the one in which they were enrolled, and some of them as much as three or four grades beyond."

Witty lists the following characteristic of young children who are intellectually gifted.

1. The early use of a large vocabulary, accurately employed.
2. Language proficiency—the use of phrases and entire sentences at a very early age, and the ability to tell or reproduce a story at an early age.

⁴ Terman and Oden, *The Gifted Child Grows Up* (Stanford, Calif.: Stanford University Press, 1947), pp. 25, 28.

3. Keen observation and retention of information about things observed.

4. Interest in or liking for books—later enjoyment of atlases, dictionaries, and encyclopedias.

5. Early interest in calendars and in clocks.

6. The ability to attend or concentrate for a longer period than is typical of most children.

7. Demonstrations of proficiency in drawing, music, and other art-forms.

8. Early discovery of cause-and-effect relationships.

9. The early development of ability to read.

10. The development of varied interests.⁸

Presumably, highly intelligent children have a biological superiority in their nervous system. Just what this is, we do not know. But it appears that intelligence is an active quality which grows in itself. Piaget says "Intelligence elaborates itself."⁹

Intelligence does not cease growing in mid-adolescence, as was formerly believed. Under stimulating conditions mental growth continues into the twenties. Young people who continue their education into early adulthood and keep themselves mentally stimulated generally grow in their scores on intelligence tests.

INTERRELATION OF GIFTEDNESS

The fact that various forms of talent tend to go together has already been mentioned. There is also a relation between giftedness and superior health and physical development, according to a number of studies which have been summarized by Catherine Cox Miles.⁷ Strang⁸ asked a number of gifted adolescents to write an essay on "How It Feels To Be Growing Up," and found them as a group to be getting along better than average with their parents and with other students.

⁸Paul Witty, "Who Are the Gifted?" *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II [Chicago: National Society for the Study of Education, 1958]), pp. 48-49.

⁹Jean Piaget, *The Origins of Intelligence in Children* (New York: International Universities Press, 1952), p. 359.

⁷Catherine Cox Miles, "Gifted Children" in *Manual of Child Psychology* (2d ed.; New York: Wiley, 1954).

⁸Ruth M. Strang, "Gifted Adolescents' Views of Growing Up," *Journal of Exceptional Children*, XXIII (October, 1956), 11.

NON-INTELLECTUAL TALENTS

The several kinds of non-intellectual talents which a program for gifted children might cover are often called "special talents" because they are partially independent of intellectual talent and because they depend on complex abilities in the specific areas of music and the other arts, or mechanical areas, or in human relations.

It is usually argued by the specialists in intelligence tests that a high degree of general intellectual ability is basic to the special talents. And there is abundant evidence of a positive statistical relationship between general intelligence and the special talents. However, there are some exceptions to this general rule. That is, there are some children with high musical or artistic or mechanical ability and average or even below average intellectual ability.

Undoubtedly the culture in which a child grows up has something to do with the talent he may show. Thus, musical talent is more common in some countries than in others, probably because the people in some countries pay more attention to music than they do in other countries, and therefore they are more likely to look for children with native musical talent and to give these children the kind of training that will develop this talent.

Social giftedness probably depends more on the social environment than do the other forms of talent. This type of giftedness is fairly well fixed after middle childhood and is stable enough and measurable enough, as well as important enough, to be included in a program for gifted children.

A STUDY OF PERSONALITY OF GIFTED COLLEGE STUDENTS

A study was done on the personality attributes of gifted college students in the United States.⁹ The sample consisted of slightly over 5,000 of the highest-scoring students drawn from 58,000 of the best senior students selected in their respective high schools to take the College Entrance Examination Board Scholastic Aptitude Test in a competition for college scholar-

⁹ Jonathan R. Warren and Paul A. Heist, "Personality Attributes of Gifted College Students," *Science*, CXXXII (August, 1961), 130-36.

ships administered by the National Merit Scholarship Corporation. The average I.Q. of the group was 150 and the minimum I.Q. was 130.

The sample was not a representative sample of gifted students. The 58,000 students from which the sample was drawn were recommended by the high school principals and selected from ratings based upon autobiographical reports. Therefore, non-achieving gifted students might be under-represented in this sample. Furthermore, the sample contained twice as many boys as girls. The number of subjects who entered the scientific and technological fields in college was over three times the number who entered other fields. Thus, boys who entered the field of science particularly are more likely to be included and recommended by their principal than those going into other fields.

The sample was compared with a random sample of college students drawn from the University of California and Michigan State University.

The group was studied with a battery of personality tests and tests of social maturity. The conclusions indicate that the attribute that most sharply differentiates the gifted of both sexes as defined in the study from groups of unselected college freshmen is a strong disposition toward intellectual activity. A second major differentiation, which is somewhat more pronounced in the women, appears to be a stronger aesthetic orientation than found in random samples of students.

Other differences found from the personality inventories, indicate that gifted students are less authoritarian, less rigid, and therefore tend to be "risk-takers" in the world of ideas. They react with greater originality, imagination, and resourcefulness to the stimulation they receive. They are independent, confident, and generally mature in their interaction with the external world. They have more complex perceptions and reactions.

SEX DIFFERENCES

The evidence of differences of intellectual ability and special talents between the sexes is complex and confusing. If only the extremely high I.Q.'s are studied, boys seem to exceed girls, as in Terman's study. But when the top 10 per cent are included

in the study, girls exceed boys during the elementary school years and well into high school.

In the identification studies to be mentioned later, girls outnumbered boys among the brightest 10 per cent in academic achievement, artistic, musical, and writing ability, and they held their own with boys in social leadership. In group tests of intelligence elementary school girls exceed boys. However, Terman assumed the sexes to be equal in intelligence and selected test items so as to make them equal, on the average, on the individual Stanford-Binet test.

In the American society of today, women as a group do not develop inherent abilities to as high a degree as men, probably because society does not expect them to do so. The feminine roles in America stress tenderness, tranquility, and submissiveness in contrast to aggressiveness, ambition, and productivity which are stressed in the masculine roles. Girls learn, for example, that they must not play tennis better than boys. They also learn to yield to the masculine expectation of being intellectually superior. As one gifted adolescent girl put it, "It's bad to be taller than a boy; but it's fatal to be smarter."

Even though the twentieth century give women a wider variety of acceptable roles than did the nineteenth, social pressures, as well as biological differences, operate to suppress the development of talent in many women. Women do not appear as frequently as men in the ranks of creative artists and scholars because the great majority spend their most creative years in child-rearing. Thus, although there are excellent women novelists and poets and singers, there are no women musical composers of note, or orchestra conductors, few famous musical performers, and relatively few women college presidents, artists, lawyers, doctors, or scientists.

SOCIAL BACKGROUNDS OF GIFTED CHILDREN

The social environment in which a child grows has a decisive influence on the development of any potential talent he may possess. Thus all social groups which are culturally underprivileged tend to underproduce children of high-level achievement.

Many children in families of lower socioeconomic status fail to develop their abilities because of lack of opportunity and stimulation from their earliest years. Their families do not encourage them to read, learn music, draw pictures, develop scientific hobbies, or do any of the things that can bring budding talent into flower. Many of them live on subsistence farms, where the family simply struggles to survive. There are, of course, exceptions in which a working-class family does as well by a gifted child as does a family with more means. However, when the child of a lower-status family reaches high school, he is often under pressure to get out and earn money. He gets little financial support from home and may find it difficult to get scholarship aid that will carry him through college or through a program of special training.

There is evidence that colleges in awarding scholarships tend to favor the children of middle-class families with above-average income.¹⁰ The median family income for scholarship holders is well above the median family income in the United States, in spite of the fact that scholarship programs are aimed, partly at least, to make it possible for able children of low-income families to go to college.

Because this factor of socioeconomic background has not always been recognized for its true importance, it may be well here to comment on the rather contradictory American beliefs that "talent will out" and that the underprivileged but talented youth deserves help. The notion has prevailed in Europe and America through several centuries until quite recent decades that high ability was to be found almost entirely in the upper classes and was inherited according to simple laws of heredity. Francis Galton, one of the ablest minds of the nineteenth century, believed that natural ability was sure to show itself. "It follows that the men who achieve eminence and those who are naturally capable are, to a large extent identical. . . . If a man is gifted with vast intellectual ability, eagerness to work, and

¹⁰ Graham R. Taylor, "A Local Scholarship Program and Its Potential Flexibility," and Richard G. King, "Talent Hunting Efforts by Colleges," in *The Search for Talent* (Princeton, N.J.: College Entrance Examination Board, 1960), pp. 67-83, 84-97.

power of working, I cannot comprehend how such a man should be repressed.¹¹

But Galton recognized that a gifted person might be handicapped to a certain extent.

A very gifted man will almost always rise, as I believe, to eminence; but if he is handicapped with the weight of a wife and children in the race of life, he cannot be expected to keep as much to the front as if he were single. He cannot pursue his favorite subject of study with the same absorbing passion as if he had not pressing calls on his attention, no domestic sorrows, anxieties and petty cares, no yearly child, no periodical infantine epidemics, no constant professional toil for the maintenance of a large family.¹²

Not until the twentieth century did people generally accept the fact that environment is also a major factor in producing people of high-level performance and that many children with excellent capacities do not develop these capacities because of poor environment. This position was well stated by J. McK. Cattell in the early years of the twentieth century:

It is evident that what a man can do depends on his congenital equipment. How far what he does do depends on his environment and how far on his congenital equipment, or how far his congenital equipment depends on that of his parents and his family line of descent, we do not know. . . . A boy from the professional classes in New England has a million chances to become a scientific leader, as compared with one chance for a Negro girl from the cotton fields.¹³

The modern view is that much potential ability goes underdeveloped because of lack of environmental stimulation and that most of this underdeveloped ability is to be found in people of lower socioeconomic status.

In both sexes, most of the children who exhibit giftedness come from middle-class homes, although the majority of children in the schools come from working-class homes. This can be seen in Table 1, which reports the I.Q. of all the children in the

¹¹ Francis Galton, *Hereditary Genius* (London: Macmillan & Co., 1925), pp. 34-35.

¹² *Ibid.*, p. 320.

¹³ J. McKen Cattell, "Families of American Men of Science," Appendix to *America Men of Science* (Garrison, N.Y.: Science Press, 1921), pp. 785-86.

TABLE 3

EFFICIENCY OF THE VARIOUS SOCIOECONOMIC GROUPS IN PRODUCING CHILDREN
IN THE TOP AND BOTTOM QUANTILES OF INTELLECTUAL ABILITY*
(Sixth Grade in River City)

Socioeconomic Group	PERCENTAGE DISTRIBUTION OF CHILDREN	EFFICIENCY RATIO† IN PRODUCING CHILDREN IN:	
		Top Quartile	Bottom Quartile
Upper and upper middle...	10	1.8	0.4
Lower middle.....	27	1.5	0.6
Upper lower.....	39	0.8	1.1
Lower lower.....	24	0.4	1.6

* Data from Robert J. Havighurst *et al.*, *Growing Up in River City* (to be published in 1941).

† These ratios indicate the relative efficiency of the various socioeconomic groups. If all groups were equally efficient in producing children of a given quartile in I.Q., the ratios would all be 1.

sixth grade of the public schools in a medium-sized American city. Group A, the upper and upper-middle classes combined, produced 1.8 times as many children in the upper quartile of I.Q. as it would if all socioeconomic groups had been equally efficient at this, and only 0.4 times as many children in the lowest quartile of I.Q. The lowest socioeconomic group, Group D, showed a reversal of these efficiency ratios.

If all four socioeconomic groups had been as efficient as the upper and upper-middle class groups in providing children with I.Q.'s in the top quartile (above about 110), there would have been 180 children with I.Q.'s over 110 in this community for every 100 such children today. In other words, the numbers of mentally superior children would have been almost doubled, and the intelligence level of the child population would have been lifted enormously.

From another part of the country there is further evidence of the effect of low socioeconomic status in suppressing the development of talent. Boys in the second and third years in the public high schools of the Boston metropolitan area were studied. The highest 20 per cent in intellectual ability were asked whether they expected to go to college.¹⁴ Those whose fathers had high-status occupations generally expected to go to college, while boys whose fathers had low-status occupations

¹⁴ Joseph A. Kahl, "Educational and Occupational Aspirations of 'Common Man' Boys," *Harvard Educational Review*, XXIII (1953), 186-201.

generally did not expect to do so. The actual percentages were as follows:

Father's Occupation	Percentage of Superior Boys Expecting to Go to College
Major white collar (executive, professional).....	89
Middle white collar.....	76
Minor white collar.....	55
Skilled labor service.....	40
Semi- and unskilled labor and service.....	29

Thus, of boys with the same high level of intellectual ability, 89 per cent of the sons of high-status fathers expected to go to college as compared with only 29 per cent of the sons of low-status fathers.

The general facts about the relation of socioeconomic status to college going are summarized in Table 2, which presents

TABLE 2
LEVEL OF EDUCATION IN RELATION TO SOCIAL STATUS OF YOUTH
IN THE UPPER QUARTER OF INTELLECTUAL ABILITY, 1960*

Social Status	Composition of Group	Do Not Finish High School	High School Grads. Do Not Enter College	Enter College but Do Not Finish	Complete Four-year College Program
Upper and upper middle....	18	0	2	2	14
Lower middle.....	41	2	15	5	19
Upper lower.....	32	3	14	5	10
Lower lower.....	9	2	6	1	0
Total	100	7	37	13	43

*Data from Robert J. Havighurst *et al.*, *Growing Up in New City*; J. Kenneth Little, "The Persistence of Academically Talented Youth in University Studies," *Education Record*, July, 1959, pp. 237-241; Robert E. Hoyt, *Retention and Withdrawal of College Students*, U.S. Department of Health, Education, and Welfare, Office of Education Bulletin, 1958, No. 1.

estimates of the educational progress of the ablest quarter of youth. Most children of upper-class and upper-middle-class families go to college if they are in the upper quarter of the population in intellectual ability. On the other hand, while 41 per cent of the ablest quarter of youth come from homes of manual workers, less than one-fourth of this group graduate from college.

While the factors of environmental stimulation and of financial ability both operate to reduce the numbers of able youth who develop their abilities through higher education, there has been great progress in the past fifty years in recognizing the potentialities of these youth and in giving them educational opportunities. Relative to the nineteenth century, the present century is more favorable to the discovery and development of talent in children of lower socioeconomic status, and also in girls, generally.

AREAS OF TALENT LOSS

In summarizing the many studies of differential production of talent in different segments of our society, it appears that the principal areas where talent exists but has not been fully developed are the following:

1. In families of low socioeconomic status. This applies especially to groups which have suffered from economic discrimination in the past. Negroes are the principal group of this sort, and they represent an area of great talent loss. Minority ethnic groups which are generally in lower socioeconomic positions also are underproductive of talent.
2. In rural areas.
3. Among girls.

School level and talent loss.—In the educational system talent is lost at the following points:

1. In the early primary grades where some children with considerable potential intelligence fail to learn to read well, and operate under this penalty throughout their lives. Often their failure to read well is the result of failure by their parents to stimulate them and to set an example of reading in the home.
2. Between ages sixteen and eighteen, when a number of able boys and girls drop out of school, as indicated in Table 2.
3. After high school graduation, when approximately half of the ablest quarter of youth enter adult life without graduating from college. While many of these young people develop their abilities in other ways, it is fair to say that their failure to enter college, or to finish a college program, is a handicap to many of them.

FORMS OF INTELLECTUAL TALENT

For the purposes of this book we have adopted a broad definition of giftedness, to include a variety of useful and complex abilities and a substantial group of people—as many as 10 per cent—at the top in each ability.

This will help to avoid what has been called "the tyranny of the I.Q.," in planning for and discussing programs for gifted children. Too often the I.Q. is used as the sole criterion of giftedness.

Within the intellectual area there are probably several kinds of ability that can be distinguished and measured separately. There are, for instance, the "primary mental abilities" described by Thurstone, for which tests are available. Thus it is possible to speak of gifted children in each of the primary mental abilities—vocabulary or word meaning, arithmetic or number ability, inductive reasoning, spatial imagery, and the like. While these abilities are interrelated, there is a good deal of difference between the levels of the various abilities in a particular person. A boy may be in the top 10 per cent in the "V" or verbal ability test and yet below average in the "S" or spatial imagery ability. At least it is desirable to separate those with high verbal intelligence from those with high non-verbal intelligence in planning a program for the gifted.

Still another distinction within the intellectual area has been suggested by Guilford and others. Guilford found a number of factors in what may be called the area of creativity, which are intellectual abilities but not measured by the ordinary intelligence tests.¹⁵ The ordinary intelligence test may be considered a test of ability to do "convergent thinking"—a kind of thinking which is common to most people and on which they "converge" or agree. Tests of arithmetic and of word meanings are like this.

However, there is another set of abilities, "divergent thinking"—thinking which diverges from the common type. This is a kind of intellectual creativity. Research which has been done on divergent thinking will be discussed in the chapter, "Creativity."

¹⁵ J. W. Getzels and P. W. Jackson, "The Meaning of 'Giftedness': An Examination of an Expanding Concept," *Phi Delta Kappan*, November, 1958, pp. 75-77.

QUESTIONS FOR STUDY AND DISCUSSION

1. How do you explain the fact that more girls than boys appear as gifted in a program of screening for the gifted in the areas of intelligence, art, music, dramatics, and social leadership, at least at the elementary school level?

2. Make a critical analysis of Terman's findings on the relation between I.Q. and other characteristics, in his study of gifted children. How do the shortcomings of his sample affect the generality of his findings?

3. *Summarize the evidence on the social adjustment of gifted children.*

4. Discuss the facts about the relationship of giftedness to family socioeconomic status.

5. How and why has the style in studying the gifted changed since about 1930?

6. How have European-American beliefs about the nature of giftedness changed in the past 200 years?

7. Compare the views of Galton with those of Paul Witty on the origins of talent.

Principles Governing the Identification and Recording of Talent

Suppose a teacher casually observes students passing by in the hallway on the way to their classrooms. Approximately one out of ten of the pupils he sees has sufficient mental ability to be designated as "gifted" or academically talented according to the definition of giftedness established in this book. Another one out of ten has sufficient artistic ability to warrant the provision of special educational programs. Still another one out of ten has unusual musical ability and similar ratios of the pupils have leadership talent, creative writing ability, mechanical skills. Many of the students may have two talents and some may have three or more that place them in the upper 10 per cent of their age group in terms of that particular ability. By the time 500 pupils have passed by the teacher, he will have looked at approximately 100 who can be considered gifted in at least one important way.

The teacher would not be able, by casual observation only, to distinguish the gifted pupils from the others. There are no traits universally characteristic of gifted children. Even if the teacher becomes very well acquainted with the students, he may miss some kinds of abilities unless he is well trained and highly motivated to seek out the gifted. To identify those students who

are gifted, therefore, he needs to be acquainted with a variety of methods and to use the many kinds of tests available.

Programs for the education of gifted children generally employ some kind of identification procedures. In a recent survey of such programs in thirty-four school districts, only three did not report special identification procedures.¹ In an earlier study, all but one school reported at least the rudiments of an identification program, if not a highly developed one.²

Identification consists of two processes, testing and selection. In the first process all the pupils are tested or observed under as standardized conditions as possible and placed in rank order from the highest to the lowest, according to their performance on any particular ability in which they were tested or observed. Selection is a process of determining which children in the rank order should be included in the special program or be given special educational provisions according to the talents which they have been observed to possess.

CONSIDERATIONS OF A TESTING PROGRAM

Like anything else in education, a testing program will flourish best and be most productive of good results in a receptive environment. There needs to be school-wide understanding and acceptance of the testing program if it is to yield the best results. Teachers, students, and parents need to understand and accept the purposes of the tests.

The testing program must be related to the objectives of education. That is, tests provide data with which to ascertain whether educational objectives have been attained. A program of testing also has to be related to the definition of giftedness adopted by a school. A school that adopts a broad definition of giftedness, for example, will need to develop procedures for screening that are as broad and as inclusive as its definition.

Many benefits accrue to the school system that employs good

¹ Jack Kough, *Practical Programs for the Gifted* (Chicago: Science Research Associates, 1960), pp. 53-549.

² Robert J. Havighurst, Eugene Stivers, and Robert F. DeHaan, *A Survey of the Education of Gifted Children* ("Supplementary Educational Monographs," No. 83 [Chicago: University of Chicago Press, 1951]).

testing and identification.² (1) The tests provide basic information for child study and personal as well as educational and vocational guidance programs. (2) They help teachers decide on the nature and extent of enrichment by providing data on the needs and capabilities of gifted children. (3) They yield data on the incidence of talent and ability in the juvenile population. (4) They make possible the evaluation of the educational program by providing baseline data against which attainment of objectives and growth among the children can later be measured. (5) Many of the screening devices are inherently stimulating to children and, as such, serve as instructional devices. For example, teachers and children enjoy certain tests, particularly some of the fine-arts tests described later in this chapter, and are stimulated to continue with the kinds of classroom exercises suggested by them long after the testing period is concluded. (6) A good identification program usually stimulates teachers and administrators to think about doing something for the children they identified. Certainly the competent observer who has recorded the abilities of gifted children would not be satisfied until the necessary educational measures to develop those abilities were undertaken.

THE PREDICTIVE VALUE OF INTELLIGENCE TESTS

A number of cautions should be observed in the use of tests and observational devices in the identification and selection of students with gifts. Such cautions will prevent dangerous oversimplification of the very complex problem of identifying talent. They will also prevent serious mistakes resulting from misunderstanding or misuse of testing devices.

The work of Terman and other early psychologists utilized the I.Q. as the sole measure of intelligence. More recent studies question this usage and point out with increasing clarity the very complex, multidimensional nature of mental abilities. The work of Thurstone indicates that intelligence can be described more adequately as a group of independent factors than as a general

²See Robert F. DeHaan and Robert C. Wilson, "Identification of the Gifted," *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II [Chicago: National Society for the Study of Education, 1958]), p. 168.

ability expressed by an I.Q. A profile rather than an I.Q. would seem to be more suitable as an expression of these patterns of abilities.

With the great complexity evident in the structure of mental ability, it is clear that a single test given for a period of only one hour or so will provide a very small sample of the child's abilities as a whole. A teacher should take this into consideration and be cautious about using only one device to measure talent.

At the present time, it cannot be assumed that gifted children can be identified *once and for all* at any given grade level. Long-term growth studies that have been under way for many years have provided a wealth of information about the general development of children as well as the growth of their intelligence. Most of the studies are in agreement that mental development does not necessarily proceed in a straight line as suggested by the concept of the I.Q. Recent work by Cornell and Armstrong,⁴ for instance, showed growth patterns in which considerable fluctuation in I.Q. was evident. One of these patterns, accounting for 25 per cent of the boys and 39 per cent of the girls, showed a sudden spurt which allowed a child to be placed in a much higher category than his early test would have indicated. One boy, for example, in the third grade was considered average. His final level of I.Q. was 130; he would then be considered to be gifted. The research also revealed that only 9 per cent of the boys and 22 per cent of the girls in the sample studied followed the approximately straight line of development predicted according to the I.Q. theory. The variations in these patterns may in part have a genetic basis and in part be due to environment. They *do* imply, however, that it is not possible to make long-term forecasts on the basis of early test results.

Bayley, in her study of the growth of intelligence, concludes that there is little hope of ever being able to measure stable intellectual factors in very young children.⁵ Thus, it does not seem possible to predict a person's later intelligence on the basis

⁴E. L. Cornell and C. M. Armstrong, Jr., "Forms of Mental Growth Patterns Revealed by Reanalysis of the Harvard Growth Data," *Child Development*, XXVI (September, 1955), 169-204.

⁵Nancy Bayley, "On the Growth of Intelligence," *American Psychologist*, X (December, 1955), 805-18.

of his behavior very early in life. She concludes that intelligence continues to grow even up to approximately 50 years of age. For this reason, the I.Q. cannot be considered a constant ratio that once established never changes throughout a person's life. Every teacher must be constantly on the alert for emerging indications of ability. Decisions and plans based on such evidence need to be kept flexible.

Studies of the strengths and weaknesses of the standardized testing instruments themselves are of significance to teachers who wish to identify gifted children. How good are the objective tests used to identify abilities in children? Two yardsticks need to be applied here: *reliability* and *validity*. Unless he understands the meaning of these terms, a teacher may place too much confidence in the results of tests and objective measurements.

In order to be reliable, the test must measure consistently whatever it is designed to measure. In order to be valid, it must measure its object accurately. That is, if it is a test of academic ability, it must accurately measure academic ability and not "popularity with teacher" or some other irrelevant factor. The tests must also be reliable in terms of ease of administration and clarity of instructions and consistency of scoring procedures. The manual of a good test will display data on reliability and validity where they can be examined by those interested in using the test.

Results of tests are subject to varying degrees of error because of factors that are irrelevant to the purpose of the test itself. This error decreases the reliability and validity of the test. An I.Q., therefore, should be considered a zone rather than a point. The true I.Q. falls somewhere within that zone. As a rule of thumb, there are two chances out of three that a person's true I.Q. lies within ten points of the I.Q. obtained on any given group test of intelligence. Thus, an I.Q. of 115 means that the true I.Q. probably falls somewhere between 105 and 125. This range varies from test to test and is called, technically, the standard error of measurement.

Three types of validity of screening procedures are described by DeHaan and Wilson.

The first may be called "long-term predictive validity." One may wish to ask, "How do we know that the screening procedures we are using pick out the children who will go on to become scientists or artists in later life?" Generally, the answer is that we don't know for sure. It would be necessary to conduct long-term follow-up studies to establish such validity, and such studies are not feasible for most school systems. Some information is available for a few standardized tests.

The second type is "short-term predictive validity." One may wish to ask, "Do the screening procedures we are using pick out the children who perform well in science or art in school?" The answer to this question is easier to determine. School systems with research departments may conduct such short-term studies or someone may be encouraged to do such studies for a Master's or Doctor's thesis. Many standardized tests have information available on their validity for predicting success in various school subjects.

The third type is called "content validity." In the absence of evidence concerning the predictive value of screening procedures, one may have some confidence in them if the content of a test samples the kind of performance about which information is desired. In most of the special talents, it is necessary to employ a combination of such work sample tests and teacher judgment.⁶

Variability of I.Q. from test to test.—Different intelligence tests are constructed with different content and are standardized on different populations and have different ranges of I.Q. Table 3⁷ shows the variations in maximum possible score obtainable by twelve- and fourteen-year-olds on five commonly used tests of intelligence.

From a quick inspection of Table 3, it can be seen that a fourteen-year-old could obtain an I.Q. of 167 on the Stanford-Binet, although such a score would be impossible on any other test in the table. On the other hand, a school system that wanted to use 140 I.Q. as a cutoff point and employ the California Test of Mental Maturity would find it impossible to set up a program for the gifted, since the test does not go that high. In comparing

⁶DeHaan and Wilson, "Identification of the Gifted," pp. 188-89.

⁷James J. Gallagher, *The Gifted Child in the Elementary School* ("What Research Says Series," No. 17 [Washington: National Education Association, 1959]), p. 6.

children's I.Q.'s, the teacher must know what tests were used in order to evaluate the I.Q.'s adequately.

TABLE 3
VARIATIONS IN MAXIMUM SCORES OBTAINABLE
ON COMMONLY USED INTELLIGENCE TESTS

INTELLIGENCE TESTS	MAXIMUM I.Q.	
	12-YEAR-OLDs	14-YEAR-OLDs
Stanford-Binet.....	190	167
Wechsler Intelligence Scale for Children.....	154*	154*
Otis Quick Scoring Test of Mental Ability (Beta).....	153	143
California Test of Mental Maturity (Elementary).....	157	136
Large-Thorndike Intelligence Test (Verbal-Bat.).....	147	150*

* Highest score given in norm tables.

Most tests also show some sex and socioeconomic bias as already mentioned in chapter ii. Tests tend to favor girls and the middle-socioeconomic levels, partly because the content of the tests themselves is generally verbal and emphasizes skills and knowledge that girls seem to obtain more readily than boys; the content tends to favor children from middle-class homes for the same reason. A screening program is likely to yield more middle-class children and more girls than boys than can be expected.

In all cases, it is important to impress on those who use the test information that everyone involved is damaged if the identification information is misused. The purpose should be clearly stated: to establish the most intelligent program of education for the full development of the child concerned.

The conclusion that can be drawn from scientific studies of tests is that although objective tests are good, and the I.Q. a valuable concept, they need to be used with a good deal of caution. There is no mechanical formula that can be applied. Every decision concerning a gifted child has to be made intelligently in the light of all available data. There is no substitute for the observations of an insightful teacher who has close relationships with her students together with the data from a wide variety of objective tests and procedures for selecting children with talent.

TECHNIQUES OF IDENTIFICATION⁸

Two general approaches to identification are possible. The first of these is through the use of standardized tests, and the second is through the use of teachers' observation. Some abilities are better measured by objective tests, others by observation, and still others by a combined approach. Some educators prefer one approach over the other, but, in general, it seems that the best results are obtained from a maximum use of both. An example of intensive use of both approaches is found in the report on the Youth Development Project in Quincy, Illinois.⁹

STANDARDIZED TESTS

Many kinds of tests for identifying gifted children are available. Some of these will be described in the following pages.¹⁰

General intelligence tests.—Since they are primarily tests of verbal and reasoning ability, general intelligence tests are, perhaps, more accurately described as tests of academic aptitude. They are usually published in a series beginning at the primary grades and extending into high school. The tests usually yield an over-all intelligence quotient.¹¹

Differential aptitude tests.—Beyond merely measuring the general intellectual level of the individual, the differential aptitude tests distinguish the various mental factors which are believed to account for intellectual ability.¹²

Since intelligence is multidimensional, that is, composed of many factors, the advantage of differential aptitude tests over general intelligence tests is obvious. The former give some

⁸ The material in this section is adapted in part from DeHaan and Wilson, "Identification of the Gifted," pp. 171-83.

⁹ Paul H. Bowman et al., *Studying Children and Training Counselors on a Community Program* ("Supplementary Educational Monographs," No. 78 [Chicago: University of Chicago Press, 1953]), pp. 11-51.

¹⁰ For further information about specific tests see O. K. Buros (ed.), *The Fifth Mental Measurements Yearbook* (Highland Park, N. J.: Gryphon Press, 1959).

¹¹ Examples of these tests are the *Kuhlmann-Anderson Intelligence Tests*, Sixth Edition, the *Kuhlmann-Finch Tests*, the *Henmon-Nelson Test of Mental Ability*, the *Pintner General Ability Tests* series, and the *Otis Mental Ability Test* series.

¹² Examples of such tests are the *Differential Aptitude Tests*, *SRA Primary Mental Abilities Test*, and the *Flanagan Aptitude Classification Test*.

indication of the pattern of mental abilities. For example, two boys may each have an I.Q. of 130. One of them may test high on verbal and reasoning and relatively low on number and spatial measures, while the other may test the reverse. Such information is brought out by differential aptitude tests. Teachers and guidance counselors can use this information to plan differentiated educational programs and vocational careers for individual students. They can also identify children whose over-all score may be low but who show one or two extremely high factors.

It is, therefore, recommended that differential aptitude tests be used in preference to general intelligence tests, particularly after the primary-grade level when the primary mental abilities become well enough differentiated to be rather reliably measured.

Individual intelligence tests.—The individual test gives a more reliable measure of intelligence than a group test does. The individual test allows for observation and clinical judgments to be made about the child. Hence, it increases confidence in the accuracy of the selection.¹⁵ Some school systems such as Cleveland, Ohio, routinely examine all candidates for special classes with an individual intelligence test. These tests are often used in order to get some estimation of the intellectual ceiling of the individual, as well as to examine "borderline cases," those children whose group intelligence test scores fall just above or just below the cut-off point for inclusion in a special group.

Tests of special aptitudes.—Special abilities which may be of interest to those who wish to establish an identification program are clerical ability, mechanical aptitude, and various motor aptitudes. Tests of these abilities can be used to gain a more complete understanding of an individual pupil or to identify pupils more surely for special education than the tests of intellectual abilities. Tests of creative thinking (described in chapter viii), which are still in the experimental stage, fall roughly into this category. Tests of special abilities may also serve to discover

¹⁵ Most-used individual intelligence tests are the *Stanford-Binet Scales of Intelligence* and the *Wechsler Intelligence Scale for Children*.

diverse talent that may not be found with the general aptitude tests.

Identifying scientific ability.—Because of the current emphasis on science, it is desirable to find a way to identify potential scientists. It appears that for persons manifesting a persistent interest in science problems no special test is necessary but, rather, that high aptitude in verbal and mathematical abilities, together with adequate muscular and eye function, provide as good a set of indicators of potential scientific ability as any single test might.¹⁴

Achievement tests.—Achievement tests¹⁵ are well known to teachers, since they are probably the most commonly used of any kind of test. They usually test the areas of academic learning such as reading, spelling, arithmetic, language, and science. From the point of view of the education of gifted children, their most important use is to discover academic abilities of high order. Methods of evaluating study habits also fall in this category.

NON-INTELLECTIVE FACTORS

It is necessary to go beyond the usual tests of academic aptitude, intellectual ability, and school achievement in the search for talent. Non-intellectual aspects of personality such as interest and motivation greatly affect the degree to which intellectual and other talent is used. The non-intellectual factors need further study. Enough is known about them, however, to make the inclusion of tests to discover them an important part of an over-all screening program.

The following tests of interest and personality are designed to identify non-intellectual factors that contribute to high-level performance in students.

Interest inventories.—A wide variety of interest inventories is available. Some inquire directly into the child's interest, others are more indirect, using incomplete sentences which the child needs to complete. An example of the latter is: "If I had more

¹⁴ Paul F. Brandwein, *The Gifted Student as Future Scientist* (New York: Harcourt, Brace & Co., 1955), pp. 9-10.

¹⁵ Examples of general achievement tests are the *Stanford Achievement Tests*, the *Iowa Tests of Educational Development*, and the *SRA Achievement Tests*.

time, I would . . ." or "I want . . ." Still other interest tests ask the child to list his activities, assuming that if the child's activities are known, the interests lying back of them can be inferred. Teachers who know their pupils intimately are usually well aware of their interests. Patterns of interests associated with diverse talents need to be identified and studied.

Vocational interests assume great importance to adolescent boys in particular. Vocational interest inventories¹⁰ provide valuable information that may help them in choosing careers.

Personality tests.—Personality factors are often taken into account in identifying gifted pupils. Tests of personality are also useful in that they yield supplementary data to be used diagnostically in studying motivational levels, in counseling and guidance, or in planning the educational program for the child.

Personality tests range from the check-list variety to the projective type. The latter should be used by a trained psychologist rather than by the regular teachers. Personality tests based on a factor analysis are becoming more prevalent and may soon provide an adequate instrument with which to measure personality. At the present time, however, personality tests are probably best used for supplementary data in the manner just mentioned.

One aspect of personality, namely, motivation, is of obvious importance in educating gifted children. Above a certain level of ability, one of the most important determiners of success is the strength of motivation of the pupil to achieve and to succeed. Recently, progress has been made in developing instruments to measure motivation, and continuing efforts may soon make these tests valuable to educators.¹¹ At present, however, the best general method of assessing the motivation of children is through the observation of teachers.

DISCOVERING APTITUDES IN THE FINE ARTS

Aptitudes in the fine arts can best be tested by methods which combine some features of tests and some aspects of personal

¹⁰ Examples of these tests are the *Kuder Preference Record*, *Vocational*, and the *Strong Vocational Interest Blank*.

¹¹ David C. McGlelland *et al.*, *The Achievement Motive* (New York: Appleton-Century-Crofts, 1953).

observations. The methods consist of obtaining from the children a "work sample" that is rated by a panel of expert judges. The work sample should be obtained and rated under standardized conditions. This procedure probably provides the best identification procedure available at the present time for screening children having aptitudes in the fine arts.

Methods of selecting children with such talents in elementary schools have been developed primarily in the pilot schools participating in the Gifted Child Program of Portland, Oregon.¹⁸ Procedures were developed for discovering children with abilities in art, creative writing, music, dramatics, physical aptitudes, and mechanical skills. The names of students identified as gifted in a given area were given to the co-ordinator of the gifted child program in each school and notation was made in the student's cumulative record. This procedure for recording test results was followed for each one of the tests in the fine arts. The teacher was instructed to expect to find from one to three children in a classroom with unusual ability in a given area of talent and that in rare situations she might find as many as six to eight.

Artistic ability.—The art-screening exercises were designed to help teachers identify giftedness in creative art in the regular classroom. In order to make the art-talent screening procedure as fair as possible to all children, some preparatory exercises similar to the screening exercises themselves were given.

Three creative-art screening exercises were given to all fourth- and sixth-grade classes. The first two exercises consisted of a crayon drawing and a painting respectively. The third exercise consisted of five partial pencil drawings to be completed by the pupils. Topics for the first two screening exercises were "Saturday fun," "This is my house," "My favorite story," and "Company for dinner." Both the preparatory and screening exercises were filed for each child until the testing was completed.

When the testing was finished, the complete work of each child was evaluated by an art-talent identification committee. This committee was composed of teachers within the school

¹⁸Robert C. Wilson (comp.), *The Gifted Child in Portland* (Portland, Ore.: Portland Public Schools, 1959), pp. 146-91.

building who were interested in children's art and who received special training in evaluating it. Members of a central art committee consisting of art supervisors and co-ordinators visited the schools and assisted the art-talent identification committees and also helped train the teachers in evaluating the student's art work.

Creative-writing ability.—A distinction was made between practical and creative writing in screening children for this ability; in judging the written products, teachers were asked to look for creative thought and expression rather than for the mechanics of writing.

The creative-writing exercises were designed for fifth- and sixth-grade classes once a week for a period of five weeks. Each exercise was completed in one school period. Discussion and comments were avoided after the class started to work on the exercise.

The exercises were: developing expressive sentences, developing a paragraph from a sentence, writing a story from descriptive phrases, writing an experience, writing an imaginative composition.

The written products were rated by the classroom teacher on a five-point scale. The papers were judged by a teacher on the following criteria: originality of ideas, depth of understanding of emotion or situation, choice of expressive words, conciseness of expression, developmental logic employed in sentences, good paragraph organization (when appropriate), well-planned plot (when appropriate), maintenance of a point of view.

Musical interest and aptitude.—This test was designed for fourth- and fifth-grade pupils to be administered by the classroom teacher. The test consisted of three sections, personal interest inventory, recorded selections, and student performance.

In Part II a phonograph record was played from which the students identified a march, slide, walk, or run; they decided whether the music was happy, sad, sleepy, or mysterious; whether the music reminded them of a horse, elephant, bee, or cow; and whether paired passages were similar or different.

In Part III the children sang individually a prescribed tune. Their performance was rated by the teacher.

Dramatic talent.—These tests were administered in the fifth and sixth grades by the classroom teachers. The battery included four exercises which were given at intervals of one week. The ratings were entered directly on the creative dramatics summary sheet.

The teacher sat in an inconspicuous place during the administration of the exercises and recorded her evaluation during or immediately following the performance of each child. Teachers were encouraged to record their first reactions promptly and adhere to them rather than reconsidering and changing them.

The four exercises were as follows: pantomime, word improvisation, reading from a script, improvisation with hand puppets. Some of the criteria for rating were: Does the child express the situation in a novel way? Does he communicate emotional attitudes convincingly? Does he command and hold attention of the group when he speaks?

Creative rhythms.—The tests were performed in a gymnasium or other large free area. They were given in the first, third, and fifth grades. Record player, drum, and sticks were available. Six children were tested at one time in order to cut down on the amount of time needed for the test.

Five exercises were used. In the first two the principal emphasis was on rhythm, and the exercises were used as a first screening. The last three exercises were scored only for the top six to twelve pupils who were selected on the first two exercises. The rest of the pupils perform on the last three exercises for the enrichment it afforded, but their performances were not rated.

In the first two exercises, tests were given to see how well a child could move to a specified rhythm without music and how well a child could move with music. In the last three the purposes were respectively to see how well a child could follow a definite dance pattern, how well he could dramatize to music a general story or a central idea, and how well the child could interpret the mood and tempo of a selected piece of music.

Mechanical aptitude.—This ability was screened by means of a *mechanical activities check list* administered to seventh-grade boys, as well as the *Bennett Test of Mechanical Comprehension*.

Many of the talent tests described above have proved to be

or not to accelerate (or retard) a pupil in grades 5 to 7. In addition, mechanics of grammar was a deciding factor in grade placement of boys but not of girls at these grade levels.

Behaviors that are indicative of talent are not always easily elicited and may therefore be hard to observe. Pupils may cover their ability because they do not want to lose status with their peer group, because they suspect the teacher will give them extra work if they achieve well, and because there is no incentive for them to work hard.

When a specific outcome, such as academic success in college can be readily predicted from a few well-known data easily gathered in high school, additional observational data do not contribute much. Sarbin²² studied the ability of clinical counselors to predict college grades as compared with the predictive accuracy of a standardized college aptitude test and the rank of the students in their high school graduating classes, combined in a multiple regression equation—a statistical method of combining scores for purposes of prediction. Predictions made by these counselors and predictions from test results were correlated with the grades earned by the students at the end of one academic quarter of college work. Sarbin's analysis shows that the predictions of clinicians were no more accurate than the predictions made on the basis of the multiple regression equation using the objective test data, in spite of additional non-intellectual data that was used by the counselors. Grades at the end of one quarter, however, may not be reliable measures of college success.

Evidently, academic success depends largely upon measured mental ability and past use of it in school work as measured by academic grades. High grades are also a measure of high academic motivation. Objective intelligence tests and past teachers' grades are the best data to show probable academic success, at least when the predictions are made on a heterogeneous unselected sample of high school pupils.

When, however, the college success of a more homogeneous,

²²T. R. Sarbin, "A Contribution to the Actuarial and Individual Methods of Prediction," *American Journal of Sociology*, XLVIII (1943), 593-602.

high-ability group of students is studied, the accuracy of predictions based on test scores and grades decreases, and the importance of non-intellective factors increases. With such a group, study habits, motivation, and personality factors become quite important, as was shown by Terman. Such non-intellective factors are probably more accurately observed than measured by standardized tests.

Furthermore, for purposes of counseling, the use of observational data gathered by counselors and teachers is extremely important. Various colleges have different standards and emphases. Therefore, it is impossible to use a single statistical formula to predict how successful a given student will be in all kinds of colleges. The knowledge that the teachers and counselors hold of specific colleges is needed to bring subjective adjustments to the formula.

The extent to which teachers can become good judges, when they are trained, motivated, and given clear criteria of talent, remains to be determined by further research.

Teachers' observations.—Teachers' observations and judgments are particularly appropriate for identifying talents that are expressed rather consistently but not intensely, that is, the non-intellective abilities. Examples of consistent abilities are leadership and friendship, which can be observed in children every day. Most teachers have opportunity to observe a wide variety of talents in children quite readily, since most classrooms provide a wide variety of experiences for children. Hence, it is possible to corroborate and correct test results with the experienced judgment of teachers and to use these judgments in many areas where tests are poorly developed.

Teachers need observational guides in order to observe systematically. The *Teacher's Guidance Handbook*²² was developed to give classroom teachers simple, efficient observational methods for discovering children with special abilities. It was developed in an attempt to guide teachers' observations toward significant characteristics of giftedness. The methods described in the

²² Jack Kough and Robert F. DeHaan, *Teacher's Guidance Handbook* (Chicago: Science Research Associates, 1955).

Handbook have been developed and tested in the schools of Quincy, Illinois, as part of the Quincy Youth Development Project.

The *Handbook* deals with the following kinds of ability: intellectual ability, scientific ability, talents in the fine arts (such as graphic artistic ability, creative-writing aptitude, dramatic talent, musical talent, dancing talent), social leadership ability, mechanical skills, and physical skills. In each of these areas a list of identifying characteristics is given that distinguishes the behavior of children who display the ability under consideration from those who do not.

A modified forced-choice instrument called the *Behavior Description Chart*²⁴ was developed in Quincy, Illinois, to aid teachers in identifying leadership ability. The teacher was given eighteen groups of descriptive statements, each group containing five items. She was asked to mark which item in the five was most like and which was least like the child under consideration. One of the items was descriptive of leadership. The other items were used for other purposes, primarily to identify maladjusted children. The items were somewhat disguised, so it was not obvious which was the leadership item. An example of one of the groups of five items is given below:

- A. Others come to him for help.
- B. Causes disturbances.
- C. Is easily irritated, flustered, or upset.
- D. Reports those who break the rules.
- E. Shows emotions in a restrained way.

One of the most important bonus benefits that comes from using teachers' observations is the sensitivity to individual differences in children it tends to develop in teachers. Such sensitivity is more likely to be developed through the observational method than through the objective test method.

Children's observations.—Another source of systematic data for screening purposes is the observations of children. They are often acquainted with each other in situations quite removed

²⁴Bowman *et al.*, *Studying Children and Training Counselors*, pp. 24-32.

from the classroom and, hence, can provide information that is ordinarily unavailable to the teachers.

In the "Guess-Who" test, a sociometric instrument, the teacher presents the children with thumbnail sketches of various behaviors in the form of a question. Examples of guess-who items used to identify leadership ability on the Quincy Youth Development Project²⁵ are given below:

1. Who are the boys and girls that make good plans?
2. Who are the good leaders?
3. Who are the ones that seem to understand things most easily, out of school and in school?
4. Who are the boys and girls that always work for the good of the class, or their team, or their playmates?
5. Who are the most popular boys and girls?
6. Who are the ones that are sure to have ideas for games and other interesting things to do, both out of school and in school?

Children can be asked to identify almost any talent or aptitude that the teacher wishes to discover, from intellectual ability to mechanical aptitude to social leadership. The teacher needs only to present them with descriptions of behavior which are observable to children and ones which are truly symptomatic of the talent she wishes to identify.

Parent's observations.—Probably no one knows as much about a given child as his parents. However, parents' knowledge is often unsystematized and unevaluated. Furthermore, parents have little basis on which to compare the ability of their children with many other children. They may make large errors of judgment. Nevertheless, what parents know about their children is valuable supplementary data to corroborate the results of tests and teacher observations or to provide decisive information in some "borderline" cases where the tests and observations are inconclusive. The list of characteristics given by Witty and described in chapter ii can be used by parents as reference points for their observations.

Information from parents' observations can be obtained by teachers through conferences or by means of questionnaires.

²⁵ *Ibid.*, pp. 32-37.

Observations of other adults.—Every child is probably known by some adults in the community other than his parents and teachers. Such persons may know the child in situations which are quite different from school and home and which may, therefore, elicit different behaviors and abilities. The leader of a Boy Scout troop, a YWCA group leader, or a minister may have valuable information on a given child. Such supplementary information can be obtained by conferences or questionnaires. It is interesting to wonder whether parents and community leaders might not become more observant of children and sensitive to their individual differences if they were frequently called upon by teachers for this type of information. Such a development would undoubtedly be a healthy one for families and for youth-agency programs and, ultimately, for the children who participate in them.

IDENTIFICATION IN THE SECONDARY SCHOOLS

Screening is an ongoing process that is never completely finished. Even if the identification procedures used in elementary schools are adequate, there is still need for continuing efforts to identify gifted children in the secondary schools, since the conditions under which individual talent will blossom and display itself cannot be completely controlled. It may happen, for instance, that a pupil needs the combination of physical and social maturation, interesting high school curriculum, and masterful teaching to motivate him to put forth his best efforts in a given field of endeavor. It is entirely possible that this combination of circumstances is missing from the lives of a significant number of pupils until they are in high school, or even in college.

Along with each pupil entering high school should go the test information and a record of his educational experience in the elementary and junior high school. In Portland, Oregon, for example, the ninth-grade teacher receives information on the intellectual ability as measured in the seventh grade, his eighth-grade academic achievement test scores, the eighth-grade teacher's comments on the pupil's performance, as well as a special card for gifted children summarizing their educational experiences. Upon entry into high school, the *Iowa Test of*

Educational Development is given to help ascertain present educational achievement. Examples of identification procedures at the secondary levels are given at the end of this chapter.

An identification program in the secondary schools serves the purpose of uncovering new talents in already identified children and of measuring the development of talents they are known to have. The guidance function of testing increases in importance as children grow older and need to make important choices of careers and further training. In high school and early college these choices are of utmost importance and, in general, the more information young people have for making their choices, the more likely they are to make intelligent choices.

THE DISCOVERY OF UNSUSPECTED TALENT

One of the most important functions of a talent search is the discovery of talent where it is least likely to occur. For this reason educators are urged to give special attention to finding talent among two disadvantaged groups, Negroes and lower socio-economic groups. Some modification of screening procedures may be necessary in order not to handicap children from these groups because of their relatively lower verbal ability. The two groups mentioned are probably society's largest pool of undeveloped resources of talent. The program of the National Scholarship Service and Fund for Negro Students illustrates an attempt to discover and develop talent among Negroes. The program is described at the end of the chapter. In chapter vi a description is given of the program to discover and develop talent among the disadvantaged in New York City.

Girls are often mentioned as another group that constitute untapped talent resources. The problem is not to discover their talent, however. It is rather a problem of changing social attitudes toward girls with talent so that they will be motivated to develop and utilize their talents.

TECHNICAL ASPECTS OF IDENTIFYING GIFTED CHILDREN

A school or school district desirous of inaugurating a program of identification of gifted children needs to make a series of practical and sometimes technical decisions about the use of identify-

Selection and administration of tests.—Tests should be selected on the basis of the kinds of talent the schools wish to identify and the reliability and validity of the tests themselves. Some school districts have specialists who are qualified to select tests for the purposes of the program. There are many good tests on the market. Examples of these have been mentioned briefly and are discussed in many standard textbooks on testing and statistics. School districts often devise their own teachers' observation forms although devices for this purpose are also available.

Standardized tests should be administered by trained personnel, if at all possible. If the teacher is to do the testing, she should be given help and training. It is desirable for the teacher to administer some tests, such as those in the fine arts. Teachers also need to be trained in what and how to observe in order to make their observations of maximum value.

When to identify talent.—Children should be identified as early in their school career as possible. Observation procedures can be established as early as the day the child enters school. It is probably best, however, to delay testing for at least a month or six weeks after the opening of school so that the children can become comfortable with the school regimen before submitting them to the sometimes difficult testing experiences.

Table 4 shows the grade levels at which the talent tests are administered in the elementary schools in Portland, Oregon.²⁸

Many schools have established schedules for regularly administering intelligence tests and achievement tests. Achievement tests are often administered every year and even twice a year. Intelligence tests are usually administered less frequently, rarely oftener than every other year unless there is some special research purpose to be served.

Combining test results.—After the tests have been administered and scored, it is best to convert the scores into standard scores so that they can be combined and compared with scores from other tests or with tests given over a period of years. Proce-

²⁸ Wilson, *The Gifted Child*, p. 18.

TABLE 4

SCHEDULE FOR TALENT TESTING IN GIFTED CHILD PROJECT

Talents	Grades							
	1	2	3	4	5	6	7	8
Art.....				X		X		
Music.....				X	X			
Creative writing....					X	X	X*	X*
Creative dramatics..					X	X		
Creative dance.....	X		X*		X*			
Social leadership....			X	X*	X*	X*	X*	X*
Mechanical ability... (Boys)							X	

* Tests are optional.

dures for changing tests scores into standard scores can be found in any standard textbook on statistics. Where this is done, it is possible to rank the pupils according to their test scores on any aptitudes on which they have been tested or observed.

At this point it becomes important to have established a policy concerning the number of children with which the special program will deal. Presumably, the children whose names are highest on the list will be given first consideration, and the selection will continue down the list until the quota for the program is filled, or until it is indicated that the quality of the talent has lowered to the point where special efforts to develop it are not justified. In short, some cut-off point must be established.

If no selection is made on the basis of the screening procedures, one of the main purposes of screening is lost, and, as a result, the entire procedure falls short of being an adequate identification program. It should be remembered, also, that no selection is ever a final one and that the whole procedure should remain flexible in order to allow children to move in and out of the special programs if further information on their aptitude, interests, and attitudes warrants it.

Systematically using test results.—Screening data have important uses in guidance and in child study. All test and observation data plus educational progress can be recorded on a card such as the one shown here. One question concerning the use of the screening data is the question of who should see and use it. The teachers of the children should be given full access to the data if they will use it to guide their plans for developing enriched curriculums and appropriate teaching methods for the children.

ENRICHMENT PROGRESS REPORT Holland, Michigan

Name	Sex (M F)	School	Parents (with changes)
Home Address (with changes)			
Date of birth	year	month	day
Occupation of Father			
Education level of Father			
Brothers (birthdate)			
Teachers' Observations			
1 = very superior, 2 = superior, 3 = good, 4 = probable ability (Use observations from Teacher's Guidance Handbook)			
Identical Characteristics	K	1	2
Intellectual			
Scientific			
Leadership			
Art			
Creative Writing			
Domestic			
Manual			
Rhythmic			
Mechanical			
Physical			
Aggressive			
Withdrawn			
Gravely Maladjusted			
Emotional Disturbance			
Handicaps			
Handicaps			
Comments on conditions under which abilities or problems were observed, the pupil's emotional stability and his social acceptability.			
K			
1			
2			
3			

Name _____

Please check after each special group or class which child has attended. Rate his or her performance H, Med. Lo.

Grade	K	1	2	3
Science				
Arithmetic				
Art				
Dramatics				
Creative Writing				
Leadership				
Mechanical				
Music				
Foreign Language				
Rhetoric				

FAMILY-COMMUNITY. Describe concrete contributions of the family or community to the development of this child's talent.

K	
1	
2	
3	

Describe classroom projects, activities, enrichment. Please indicate as clearly as you can the part you played in helping the pupil start the activity and bring it to completion.

K	
1	
2	
3	

The parents of the children are entitled to know the results, particularly if the school expects to enlist the aid of the parents in developing a total program for the child. In conferring with parents, it is a natural step to get their viewpoint on their children. It is also advisable to inform the children themselves of the results of the tests and observations in a situation in which they can be helped to understand and assimilate the information.

EXPECTED ACHIEVEMENT OF THE GIFTED

A classroom teacher needs to determine approximately, at least, at what level he can reasonably expect a gifted child to achieve. A student whose mental ability puts him within the upper 10 per cent of his age group should obviously achieve at a higher level than his own average grade level. But just how much higher?

The "Achievement Quotient" (A.Q.) has been used to give such an estimate. It is supposed to express achievement in a way that the I.Q. expresses mental ability. It is a ratio of achievement age score from an achievement test to mental age score from an intelligence test. An A.Q. of 100 is average. Gifted children, presumably, have an A.Q. above 100. For gifted children, however, the A.Q. is an inappropriate expression of their expected achievement because their high mental age makes it necessary for them to achieve at a sometimes ridiculously high level in order to be able to obtain an A.Q. over the average of 100. Suppose, for instance, a boy of 10 years of age has a mental age of 15 years (I.Q. 150). He would have to achieve at a 15-year level just to obtain an A.Q. of 100. To obtain an A.Q. of 150 to match his I.Q., he would need an achievement age of 22.5 years.

A more accurate way of estimating the level at which a gifted pupil can be expected to achieve is based on assumption that a person can achieve at approximately his mental age level and that intelligence tests and achievement tests are correlated in varying degrees. If the correlation is perfect, we can expect a student's achievement age to equal his mental age level. If the correlation is low we cannot tell what the relationship will be.

A rule of thumb can be used. Subtract the student's chronological or physical age from his mental age and multiply the

difference by the coefficient of correlation between the test of mental ability and the test of achievement. Add the result to the student's chronological age. The sum expresses the age level at which the student can be expected to achieve. The rule may be expressed in the following formula:

$$\text{Expected achievement} = CA + r (MA - CA).$$

Take the case of the 10-year-old boy with the I.Q. of 150. His mental age is 15 years. Let us suppose that there is a correlation of 0.75 between reading achievement tests and intelligence tests. His expected achievement would be estimated as follows:

$$\begin{aligned}\text{Expected achievement} &= 10 + 0.75 (15 - 10) = 10 + 3.75 \\ &= 13.75 \text{ years.}\end{aligned}$$

In other words, he can be expected to read at the level of almost a 14-year-old pupil, or at almost the eighth-grade level.

CRITERIA OF A GOOD PROGRAM OF IDENTIFICATION

Listed below are some criteria for conducting a program of identification:²⁷

1. Identifying superior and talented students is the accepted responsibility of all teachers, counselors, and administrators of the school.

2. A systematic search throughout the school is necessary. If the screening process is not conducted in a careful, well-organized way, capable students may be overlooked.

3. Other mental abilities besides those measured by I.Q. should be considered, in particular, creative ability. Other special aptitudes should also be included.

4. Non-intellective factors should be recognized and considered during the screening process. Such factors as the student's social characteristics, physical and emotional health, motivation, and his general pattern of behavior should be considered in developing a list of talented students.

5. The identification process should be initiated as early as possible.

²⁷ Adapted from "Identification," *NCA Superior and Talented Student Project* (Chicago: North Central Associations of Colleges and Secondary Schools, 1938), p. 4.

6. A continuous screening of gifted students should be in operation from the first grade through the twelfth.

7. Flexibility should be maintained in the screening or identifying program. School officials should be willing to add students to the program who were not previously identified. Schools will find that some students they had selected are unable to cope successfully with the program, and adjustments will therefore have to be made.

EXAMPLES OF TALENT SEARCH PROGRAMS

PROJECT TALENT

In March, 1960, data were collected on all the students of about 1,200 secondary schools including grades 9 to 12.²³ Project Talent was an inventory not only of numbers but also of the quality and potential of American youth. A two-day battery of educational and psychological tests was given to the students that represent a 5 per cent sample of high school students in the nation. The tests included a broad range of aptitude and ability tests, measures of educational achievement in mathematics, English, and other areas, and measures of interest in personal characteristics. These test scores will be combined with information about the background of the student, the community, and the school. About 500,000 students and 25,000 teachers are participating in the study.

In the follow-up phase of the study, an attempt will be made to determine how closely the present potentials of the students match their future accomplishments. The subjects of the study are to be followed up approximately one year after graduation of their high school class and at intervals later. Information will be obtained from the students on their occupations, training courses actually entered, the reasons for their occupational choices, success and satisfaction in the activities chosen, present plans, including marriage plans, marital status, change of residence, and other related facts regarding education, career, and adjustment. This information will then be compared to the original test and background data.

²³ John C. Flanagan and John T. Dailey, "Project Talent—the Identification, Development, and Utilization of Human Talents," *Personnel and Guidance Journal*, XXXVIII, No. 6 (February, 1960), 504-5.

It is hoped that the study will yield a comprehensive counseling guide indicating the patterns of aptitudes and ability which have predicted a success in various careers, a better understanding of how young people choose their life's work, and a better understanding of the educational experience which prepares students for their life's work.

NATIONAL SCHOLARSHIP SERVICE AND FUND FOR NEGRO STUDENTS

The National Scholarship Service and Fund for Negro Students, in operation since 1948, seeks to increase opportunities for Negroes in interracial colleges and universities.²⁰ From 1948 to 1960 NSSFNS helped place more than 7,000 students in over 350 different interracial colleges and awarded over \$2,500,000 in scholarship aid. In its first two years, more than 520 students were helped to move from segregated high schools to 138 non-segregated colleges in the North and South. About \$260,000 in scholarship awards were given from college and project funds.

The testing and counseling tools used in the southern project of NSSFNS were conventional. The direct methods used and the generally deprived group searched were not. In this pioneer effort NSSFNS went directly to one of America's most underprivileged groups to look for those sure to be found.

A specially prepared two-hour version of the Scholastic Aptitude Test of the College Entrance Examination Board was used as the testing tool. In almost all the schools, this was the first time that the students had been asked to take such a test. Partly as a result of their inexperience and partly as a result of their deprived cultural background, a large number of students scored considerably below the national public school average. Individual conferences for those students whose test scores predicted even a ray of hope for academic success in college helped them decide which interracial institution they would like to attend. Procedures for application, financial needs, and scholarship opportunities were discussed. School records for the junior year, test scores, and interview impressions were sent to the NSSFNS offices in New York. The field staff continued to visit

²⁰ Adapted from Richard L. Plaut, *Blueprint for Talent Searching* (New York: National Scholarship Service and fund for Negro Students, 1957), pp. 1-10, *passim*.

college campuses throughout the country, learning about their admissions and financial aid policies and practices as well as the racial attitudes of administrations and student bodies. Information about appropriate college and scholarship opportunities were returned to each qualified, interested student.

NCA SUPERIOR AND TALENTED STUDENT PROJECT

The Superior and Talented Student Project of the North Central Association²⁰ is designed to find, develop, and implement procedures and programs in secondary schools to identify, guide, and motivate the maximum number of superior and talented students in all areas of school achievement. A further purpose is to help students plan for and acquire a thorough college education. STS programs are in operation in 100 selected secondary schools throughout the nineteen NCA member states, and in 1960 the project became nationwide. Each of the 100 schools has set up a pilot program, allocated personnel to operate it, and sent an administrator and counselor team to summer workshops.

Three techniques and procedures are used to identify students. First, standardized tests of mental ability, achievement, and aptitude are used. Second, marks or grades, taken as indicators of past school performance are used. Third, teachers' observations and nominations of intellectually superior students are used. They are also asked to nominate students talented in areas other than the intellectual areas.

The following weights are given to the factors or evidence of a student's academic ability. He is given two points if his I.Q. is 110 above or above the seventy-fifth percentile, one point for a score on the standardized achievement test above the seventy-fifth percentile, one point if his grades are B or above, one point if he is recommended by a teacher, and one point if his standardized reading score is above the fiftieth percentile. If the student's total score is four out of a possible six points, he is eligible for the Superior and Talented Student Program of the school.

²⁰ "Identification," *NCA Superior and Talented Student Project*.

IDENTIFICATION IN THE PORTLAND PUBLIC SCHOOLS,
PORTLAND, OREGON

The identification program in Portland is a good example of adequate methods of identification. The following description is quoted from Kough,²¹ who describes the identification program as follows:

The Portland program is now designed to discover and provide appropriately for any intellectual pursuits.

It was decided to identify approximately ten percent of all children in each participating school, this number to include both the intellectually able and the talented. It was assumed on the basis of previous studies that *some of the talented would not qualify as intellectually gifted* and that the reverse would also be true.

Identification is an open-ended process; *no final roster is ever made for a particular group of children*. Maturity, interest, drive, and determination bring about changes in the tentative roster each year. Identification begins with six-year-olds as they enter the first grade and continues through the years. Different aspects of the identification process are scheduled from year to year, the last tests being administered during the junior year of high school.

Identification combines systematic teacher observation in all grades with a district-wide group testing program for all children. To this is added a schedule of talent testing repeated at intervals to allow for maturity. The program identifies and provides appropriate instruction for pupils who are talented in art, music, creative writing, dramatics, mechanics, and leadership.

The intelligence and achievement tests used include the SRA Primary Mental Abilities test, which is given to the upper third of the fifth grade, and the Iowa Tests of Educational Development, which are administered to all pupils in the ninth and eleventh grades. Various other tests are administered for specific purposes. As an example, algebra aptitude tests determine membership in early and accelerated algebra classes.

THE NATIONAL MERIT SCHOLARSHIP PROGRAM

In the first five years of its operation, since 1955, the National Merit Scholarship Program²² has awarded 4,000 scholarships total-

²¹ Kough, *Practical Programs for the Gifted*, pp. 134-35.

²² See John M. Stalnaker, "National Programs for Discovering Students of Exceptional Ability," *Exceptional Children*, XXIII (March, 1957), 234-37, 266.

ing more than \$20,000,000. In the spring of 1959, students from over 14,000 schools took the three-hour, high-level National Merit Scholarship Qualifying Test of educational development, especially designed for the program by Science Research Associates. Each participant pays a fee of one dollar to the testing agency. The fee is paid by the National Merit Scholarship Corporation for those who are unable to pay. These funds are used to cover the cost of testing and reporting.

Reporting the scores.—The tests were scored by an electronic test-scoring computer at the Measurements Research Center at the University of Iowa. The results were sent to all participating schools late in the summer of 1959. There are five subscores in different subject-matter areas, as well as a total composite, which are used by guidance directors in many cases to help students plan their academic futures and careers.

Naming the semifinalists.—The top scoring students in each state were named semifinalists, a national group of 10,000 high school seniors. The number of semifinalists from each state is apportioned according to the total of its graduating seniors. State quotas have been used since the inception of the Merit Program because research data have indicated that the top scoring students consistently perform well in college, regardless of state.

Each semifinalist was asked to take another examination—the three-hour Scholastic Aptitude Test of the College Entrance Examination Board, in December, 1959.

Semifinalists identified to scholarship-granting institutions.—NMSC reported all 10,000 semifinalists to colleges, universities, and other scholarship-granting agencies, as well as to their colleges of choice, in order to bring the high-scoring students to the attention of institutions that, collectively, control the awarding of the vast majority of scholarship funds available.

Naming of the finalists.—Nearly 98 per cent of the semifinalists repeated their high test performances in the second test, filed the necessary forms, and were named finalists in February, 1960. Each has since been awarded a "Certificate of Merit," and is considered academically and intellectually qualified to be named a Merit Scholar. Only lack of funds prevents awarding every one a Merit Scholarship.

The Awarding of scholarships to Merit Scholars.—The final step was the selection for the Merit Scholarships—financial awards that have been made available by NMSC and some 110 other scholarship donors in 1960. Although every finalist is considered fully qualified to receive such an award, only 1,000, or one in ten, of the finalists were actually offered Merit Scholarships. About 425 scholarships, called National Merit Scholarships, were offered by NMSC, while some 575 were offered by sponsoring organizations. NMSC annually convenes the "Merit Scholar Selection Committee" a nationally representative panel of experts in academic selection, to select recipients for their awards. This panel was charged with the responsibility of selecting the finest scholarship prospects that the data available and their professional experience would permit. Judgments were based on members' evaluations of test scores, extracurricular activities, demonstrated qualities of leadership, school and community citizenship, high school grades, and other data; relative financial need, college choice, and career plans were ignored. Each student stands on his individual record to date. Nearly all finalists have superb records in academic and extracurricular activities, and final decisions are extremely difficult to reach. Again, selections are made separately for each state, the number awarded in each state being set by quota.

The other 575 Merit Scholarships that were offered by some 110 organizations, including corporations and corporate foundations, private foundations, professional societies, clubs, individuals, and groups of individuals. The National Merit Scholarship Selection Committee makes the selections for some of these sponsors, while others form committees and make their own choices. Sponsors may set their own criteria of selection among the finalists. Some have certain sponsors restrict their selections to candidates from special regions, states, and cities. Others seek those with outstanding engineering or science potential. One large-scale program limits its awards to finalists who plan to teach science or mathematics at the junior or senior high school levels.

QUESTIONS FOR STUDY AND DISCUSSION

1. In the second grade, a boy obtained an I.Q. of 126 on a group intelligence test. In the fifth grade he was tested again and obtained an I.Q. of 141 on a different group intelligence test. Discuss as many reasons as you can for the discrepancies in his scores.

2. Discuss and evaluate as many methods as possible for discovering intellectual ability.

3. What are the strengths and weaknesses of various methods of identifying different kinds of talents?

4. What is the value of identifying non-intellective factors, such as attitudes, interests, personality?

5. Discuss the dangers of using teachers' observations as the sole method of identifying talent. How can these dangers be decreased?

6. Outline what you think would be an adequate program of identification for a school system. Go into as much detail as you are able, naming types of tests to be used, at what levels different talents should be screened, who should be responsible for what aspects of the program, *etc.*

7. Most schools do not screen for a diversity of intellectual talent nor for a diversity of non-intellectual talent. Why is this so? Is this a good state of affairs?

8. A girl eight years of age with an I.Q. of 125 starting the fourth grade was able to do fifth grade arithmetic. The teacher found out from the school psychologist that arithmetic achievement and intelligence tests correlated .50. Was the girl achieving as well as could be expected in arithmetic?

9. Compare the purposes and methods of the talent search programs described in this chapter.

10. Compare the identification program of a school system you know against the criteria listed in this chapter.

Educational Objectives and Curriculum for the Gifted

Educational objectives are statements of goals to be attained in the educational enterprise. Objectives are drawn from our democratic philosophy, Christian ethics, from our national and international purposes, from our concept of the nature of man, from the psychology of childhood and learning, and from sociological and economic considerations. General objectives permit a diversified nation such as ours to find some common basis for carrying on the educational enterprise.

The following statement of general objectives of education for all children is one example among many such statements. Most readers will probably agree with it. These objectives are the development of:

(1) a considered sense of values based on religion, philosophy and experience; (2) the basic abilities and skills that are widely transferable and needed in nearly all walks of life. In this category is included mastery of the scientific method, understanding people and working with them effectively, communication, organization (the marshalling of scarce resources for given ends), wholehearted and persistent application to the task at hand, and memory; (3) a judiciously selected knowledge of classified facts and relationship; and

(4) joy—satisfaction—well-being—(whatever you call it)—in the exercise of one's faculties in doing, perceiving, hearing, touching, in the various aspects of life.¹

Tyler shows a systematic way of organizing objectives, indicating both the behavioral aspects and the content aspects of educational objectives.² Educators do well to devote much time to setting up and formulating objectives because they are the best criteria for guiding all the other activities of the curriculum-maker.

General objectives of education assume a common starting point for all children—that they have common basic human natures and needs, that they have citizenship in a common country, and that they share a common heritage.

Although the objectives of education are the same in many respects for all children, there are two strong arguments favoring special objectives for the education of gifted children over and above the common objectives described above. The first argument follows from the special capabilities of gifted children. Studies of gifted children highlight their unusual characteristics, their ability to think abstractly, to generalize widely, their creative abilities, and their leadership performance. Educational objectives should be established in the light of what the gifted person brings to the learning situation.

The second argument arises out of the fact that gifted children in American schools today will very likely provide the bulk of leadership tomorrow. Because special demands will be made upon them, their education should prepare them adequately to discharge these special responsibilities.

A simple analysis of the role that leaders and creators play in society will be presented in order to emphasize the need for formulating special objectives for the gifted persons who will fill these roles. In this analysis society is seen as consisting of a hierarchy of specialized roles to be played by individuals with a variety of gifts.

¹ Theodore O. Yntema, "Liberal Education," *Hope College Alumni Magazine*, July, 1960, p. 11.

² Ralph W. Tyler, "Basic Principles of Curriculum and Instruction: Syllabus for Education 360" (University of Chicago, 1949), pp. 3-40.

Society has need at the highest level for a group of individual creators or innovators who are and will be the cutting edge of social, scientific, artistic, and spiritual progress. Such innovators ask questions, are sensitive to problems, and see relationships that *open up new areas for cultural advance*. Though small in number, this group is more responsible than any other for the advance of society.

At a second level are those gifted persons who translate the new concepts and discoveries of innovators into useful products and institutions. This might be seen as the role of the engineers and the technologists who apply the basic new discoveries to useful products. An outstanding example of the work of the translator is the transformation of theoretical and mathematical conceptions of mass and energy into atomic energy which began during the last war and continues still.

A third level consists of roles played by those who share and communicate ideas. Theirs is the job of organizing and distributing ideas and products. Authors of textbooks are examples of persons who disseminate knowledge.

The fourth role played in society is the role of the consumer and maintainer of culture. This role belongs to those who benefit from the work done by those in the three higher levels. The benefit comes in the form of a higher standard of living, a richer life of beauty and art and comfort. This role also involves the maintenance of society through fulfilling the responsibilities of ordinary citizens. Gifted persons are also consumers of culture and need to be prepared to play this role intelligently. In this, gifted children share common educational objectives and experiences with all children.

None of these roles is pure, probably everyone plays some part in more than one of them. Bright youngsters, however, when they become mature, would presumably be very active in the first three roles, in the creation, the application, and the distribution of cultural products. An important objective of education, then, is to prepare the gifted youngsters to be the creators of ideas and products, to be the translators of these into benefits for mankind, and to be the communicators for the spread of culture.

Special objectives for the education of the gifted become applicable to them by degrees. That is, the more talented the child is, the more outstanding the promise of his contribution to society, the more specialized the objectives for him should be.

The question of the extent to which the common educational objectives are applicable to the gifted can be put another way. To what extent are special educational objectives for the gifted applicable to all other children as well? It might be argued that although all children have many things in common and therefore should share common educational objectives, all children also have some *characteristics of giftedness and should share these* special objectives of education for the gifted. Therefore, by striving to formulate and attain special objectives for gifted children, children who are gifted to lesser extent or in limited areas can also attain by degrees to some of these objectives. For instance, if a school has established as one of its purposes to develop artistic talent in children with outstanding artistic ability, this objective can become the basis of enrichment of the curriculum, not only for children who have unusual artistic talent, but also for children who have artistic ability of lesser degrees.

EDUCATORS' VIEWS OF SPECIAL EDUCATIONAL OBJECTIVES FOR THE GIFTED

Within the circle of educators, there is lack of clarity and agreement on whether the objectives for the gifted should be the same as for other pupils. A systematic study of objectives conducted by Kincaid in California² points out some of the disagreements among supervisors, principals, teachers, guidance directors, parents, and students all of whom served as subjects in the study. These subjects were asked what educational objectives they considered to be particularly applicable to the education of the gifted.

The study concludes, among other things, as follows:

1. Supervisors differ consistently and often significantly from principals, teachers, guidance directors, parents, and students, in

Donald Kincaid, "Objectives of Education for Gifted Children in California Elementary Schools," (Los Angeles City School District Research Project, No. 7 [April, 1956]).

that they rated fewer objectives of education as being more important for gifted children than for other children. They also rated enrichment in the regular classroom as the best instructional plan for gifted children and emphasized the importance of objectives of education for all children rather than for gifted children.

2. Guidance directors rated objectives in the general areas of effective thinking and understanding of environment as having relatively more importance for gifted children than for other groups of children. The interpretation was made by the investigator that ratings of guidance directors may be related to their specialized training and experience and knowledge of occupational information relating to manpower shortages, coupled with a special knowledge of the characteristics and needs of the gifted.

3. Principals were highly favorable to acceleration as the best instructional plan for the gifted children. This view perhaps reflects the relative administrative ease of providing acceleration without the necessity of additional expenditures. Supervisors, however, reacted adversely to acceleration.

The same study also reports that objectives of education were not reported by fourteen of the thirty-nine districts having special programs for educating the gifted. Less than one-third of the thirty-nine districts reported objectives in even the most important areas such as effective thinking, citizenship, and basic skills. *This fact seems to indicate that many districts have not thought through or formulated objectives of education for gifted children.*

RESOLVING THE ISSUE BETWEEN THE SPECIAL AND GENERAL OBJECTIVES FOR THE GIFTED

The issue between special and common objectives of education for the gifted children can best be resolved by recognizing that objectives of education for the gifted are more radically different and individual and cannot be attained simply by a slight extension of the common educational objectives. More is involved than a mere shift of emphasis in general educational objectives. There are genuine differences in what gifted children

bring to the learning situation and in what society expects its future leaders to accomplish. It is imperative that gifted children be educated for creative, leading roles, for communicative and stabilizing roles in society. Education must prepare them for these roles.

Children who may not be classified as gifted should also have some emphasis placed in their education on special objectives for the leaders, or the gifted. A society in which "common folk" are also creative is desirable. Widespread creativity is probably the best guarantee of creativity among leaders. The man on the street needs to have high moral values so that he will be sensitive to moral issues and demand high morality among his leaders.

On the other hand, some of the education objectives of all children are applicable to the education of gifted children, particularly regarding the consumer and maintainer roles. Common education is important for all children in order to insure the unity and morale of society and to make it possible for the gifted to keep in touch with the broad spectrum of humanity they will be influencing.

Objectives of education for the gifted should be both the common and the specialized. The double requirement of special and common elements in educational objectives grows out of the American value of the uniqueness of the individual, on the one hand, and the value of the unity and openness of society, on the other.

PRACTICAL PROCEDURES FOR FORMULATING EDUCATIONAL OBJECTIVES FOR THE GIFTED

How does a school district go about rethinking and establishing the objectives for educating gifted youngsters? A fundamental study along several lines is a prerequisite to the formulation of adequate objectives. Three areas of study are described below.

First, each local school district, through its guidance personnel and teachers should make a rather intensive study of the characteristics of the gifted children in its own schools. Such a study can be preceded by a review of other research studies, such as those given in chapter ii. It is important, however, that studies be carried out on local children. In the past, educators have not

studied and observed gifted children as objectively as they should have. Teachers have largely underestimated how much gifted children can learn and how well they can perform. Hence, it has been difficult for teachers to visualize how well they will perform under optimum conditions for learning. If it is possible, a school psychologist might demonstrate for teachers how a very bright youngster responds in an individual testing situation compared with average and below average youngsters. When teachers observe the alertness and mental acuity of the brighter youngsters, they will be better able to estimate what their learning level can mean. Often a report of an I.Q. means little to teachers because they do not see the kinds of behavior that have gone on in the testing situation to produce that I.Q.

A second area of study for teachers who desire to formulate adequate objectives for the gifted is the lives of great men. In this area, educators, too, are often uninformed of what the life of the leaders, artists, scientists, and executives, really consists. Hence, they cannot visualize for themselves, nor help gifted children to catch a picture of, what such a life of high-level productivity might hold. Biographies, autobiographies, and interviews with community leaders are sources of data for this part of the study.

Even the life of the intellect with which teachers are most intimately acquainted is often misunderstood by teachers and by society as a whole. It has been portrayed to the man on the street as a rather grubbing existence, a thankless vocation, an unappreciated calling. Little is told of the excitement that the scholar or researcher feels when making new discoveries, the satisfaction he has of being on the growing edge of culture, the variety of exciting people with whom he associates, the competition (stronger than in business) for ideas, the rewards of good work within the academic world. A study of the lives of people who participate in these and other leading pursuits help educators visualize and formulate objectives of education for the gifted.

A third area of needed study is our national purposes and the desires of humanity all over the world. In other words, educators need to get a fundamental picture of the nature of the forces that

are operating in the world so as to communicate these to gifted children. Since the gifted children will be most influential in shaping these forces in the future, teachers should understand what they are. A series of debates on national purposes in *Life* magazine,⁴ by such men as Walter Lippmann, John K. Jessup, and Adlai Stevenson, is one revealing source for such studies. The large goals outlined in these articles will help the teacher extend the horizons of the future for the gifted children.

Study and discussion along such lines is prerequisite for formulating meaningful educational objectives for the gifted and will undoubtedly influence teachers in many ways in their classrooms. Teachers will see in gifted children the future leaders whose attitudes have to be shaped, whose vision needs to be expanded, whose motivations must be raised so that they may face the challenge which lies ahead of them.

DEVELOPMENT OF THE CURRICULUM

The development of the curriculum logically follows and is based upon stated objectives of education. The curriculum may be described as the implementation of the educational objectives. Everything that happens to pupils can conceivably be called "curriculum." Such a broad definition, however, dilutes the meaning of the term. It is probably better to restrict the definition of curriculum to the planned, purposeful sequence of learning experiences that are designed to attain the educational objectives.

The curriculum or body of common learning in the American schools is fairly well defined. It has evolved along with the educational objectives over a period of years. It is not a static thing but is constantly being shaped and reshaped by developments in society, changes of goals, the pressures and threats that are brought to bear upon schools, the opportunities that open in vocational fields.

It began to be generally realized in the 1950's that the common curriculum as found in most elementary and secondary schools was inadequate for the education of the upper 10 to 20 per cent

⁴"A Crucial U.S. Debate on National Purpose," *Life*, May 23, 1960, p. 22. Other articles on this topic are spread over a number of following months.

of the school population. In order to remedy this situation, educators have been exhorted and have exhorted themselves to enrich the curriculum. *The concept of enrichment is the key concept in the education of gifted children.* Enrichment is the curricular counterpart to special educational objectives. It is through enrichment that special educational objectives are attained. Enrichment is the provision of educational experiences that will do two things: first, enable the gifted person to develop his strengths, the things he does best, and second, enable him to fulfil the specialized role he will play in society.

Since children with unusual mental abilities are able to think abstractly, generalize more widely, and accumulate facts and principles more rapidly, it is necessary to give them not only more material to learn but qualitatively different experiences. Enrichment means supplying more opportunities for the gifted to delve more deeply and to range more widely than the average child in his intellectual, social, and artistic experiences. Enrichment is based on the principle that, for maximum learning, the educational environment should set increasingly complex and more advanced learning tasks.

Enrichment is also dictated, however, by the special roles that the gifted children will play in society as adults. It cannot be emphasized too strongly that these roles need to be more clearly understood by educators and taken into account in the enrichment of education for gifted children.

TWO TYPES OF ENRICHMENT

There are two general types of enrichment. In the first type, provision has been made for the pupil to penetrate more deeply into any given area and to take more advanced work than the average children do. This may be called intensive enrichment, vertical enrichment, or enrichment in depth. It is accomplished by providing opportunities for specialization in the given area of activity or working at a more mature level. Vertical enrichment is particularly applicable to skills such as reading, arithmetic, and some areas of science. Intensive enrichment allows for the inclination of many gifted children to pursue an activity or develop a skill until they become proficient in it, reach a saturation

point. In doing so, they satisfy their curiosity about it, reach a sense of "closure," a feeling of completion.

Intensive enrichment almost inevitably requires acceleration. This is disadvantageous to a school that operates under a rigid curriculum and grade system. In one such school, for example, a first-grade boy learned how to write his name in script. He was only permitted to print it, however, since script writing was not taught until the third grade. Hence, when he wrote letters to his grandmother, which he often did in his spare time in the classroom, he had to smuggle them home to sign them in script writing.

The second type of enrichment is called enrichment in breadth. It is also called extensive, horizontal, or lateral enrichment. This is accomplished by providing opportunities for gifted pupils to broaden their experience by working in areas not ordinarily explored by the average child, who lacks time or inclination to do so. In some areas of the curriculum, such as social studies, literature, and the humanities, it is important for the child to assimilate and integrate complex ideas. Maturity, experience, and the process of growing up are necessary to make these experiences meaningful. They cannot be accelerated. Some gifted children who are particularly interested in social studies and humanities can profit from lateral or broadening enrichment, while others, more interested in math and science, will perhaps not be motivated by lateral offerings, but will demand such deepening of their interest as can be obtained through intensive or vertical enrichment. The curriculum may be compared to a spectrum with mathematics at one end and humanities at the other, with physical sciences, life sciences and behavioral sciences in between. At the mathematics end of the spectrum, acceleration or vertical enrichment is most needed. As one moves to the humanities section of the spectrum, horizontal enrichment becomes increasingly necessary.

A distinction should be made between enrichment and various kinds of administrative arrangements that have been devised to make enrichment possible. Thus, enrichment does not necessarily require grade acceleration. It may be achieved by holding the child in his age group and providing an accelerated curriculum

for him, that is, speeded up learning experiences. A distinction should also be made between enrichment and "enrichment in the heterogeneous classroom." The latter is an administrative device. Enrichment per se is the heart of the program for educating gifted children. Whether it is to be done in the special group or in the heterogeneous classroom or even in the community is a matter to be decided by the circumstances in a local community and school system. Administrative arrangements will be discussed in the next chapter.

PROBLEMS ARISING OUT OF ENRICHMENT

One of the problems arising out of enrichment is that of providing continuity and integration in the learning experiences that comprise enrichment. A teacher, let us say, at the fourth-grade level may build some very rich learning experiences around a given student's interests and ability in science. The fifth-grade teacher may feel less comfortable teaching science and may tend to ignore that area so that there is a break in the child's enrichment. The sixth-grade teacher may discover in him some latent music ability and refer him to music teachers. In junior high, he may once more find teachers who pay attention to his scientific aptitude and encourage him in this area. Meanwhile, he may or may not be encouraged to pick up his musical talent again.

Each of the learning experiences that often constitute enrichment for a gifted child, even if they are discontinuous, are probably of value to him, particularly in the lower grades. They help him explore many areas of learning before he decides on the ones that interest him most. Discontinuities, however, may have a more serious effect in secondary school and are even more damaging in college. The closer the student comes to the end of his formal education, the more attention should be paid to providing continuous experiences in his specialty.

The problem of integrating enrichment into the curriculum raises the question of whether or not the curriculum should be completely revised for the gifted children or whether enrichment should be simply attached to the already established curriculum. The more the curriculum is altered, the less suitable it

will probably be for average and below-average children. Special educational facilities such as special schools and classrooms will then probably need to be provided for the superior students. If, however, every teacher can find ways of enriching the basic curriculum and if some semblance of continuity in the enriched learning experiences can be developed, gifted children can probably be adequately educated in the regular schools without highly specialized facilities.

The problems of individualizing, integrating, and finding continuity in enrichment can probably be solved in the comprehensive school, if, over and above the regular curriculum, the systematically enriched learning experiences that are necessary to prepare gifted children for their special roles in society are provided. Individualized instruction based upon the particular strengths and talents of each gifted child can be added at still a higher level of enrichment. The unique abilities of each child can then best be developed. This is the challenge that lies ahead of American education.

A problem also exists in the relationship between enrichment of the curriculum and mastery of it. To what extent should gifted students be required to consolidate and even overlearn what they know, instead of pressing on to new fields of knowledge and skills. Or a related question is, "Should gifted children be taught in the areas of their strengths or their weaknesses?" Unfortunately, we do not have adequate research to guide us in the solution of the problem of *how* gifted children learn. Part of the answer lies in the judgment that teachers must make on the relative importance of the thing that is to be overlearned compared to the stimulation of novel learnings and partly on the basis of the effect that such overlearning will have on the child's future learning. Suppose, for example, that a brilliant student in the field of history has very poor handwriting. Should such a student be required to drill his handwriting? What will the consequences of such overlearning be, on his motivation to learn in the field of history, or in school generally? If he can be convinced that it is essential for him to write well in order to be a great historian, he may be motivated to make up his deficiency. It would be hazardous, to say the least, to hold a student back in

the study of history until he had achieved some predetermined level of competence in handwriting unless the student was thoroughly convinced of the desirability of doing so.

To what extent should enrichment aim at producing intensively trained specialists as opposed to somewhat less intensively but more broadly educated individuals? Is it better to advise a student to channel his energy into high level achievement in one thing he does best, or to spread his energy into a somewhat lower level of attainment in many areas of endeavor? Society can probably use both kinds of persons. It is probably, therefore, a matter of personal preference for each individual to decide what pattern of abilities to develop. Educational policy should not be tied to producing only specialists or generalists. Teachers should attempt to educate the individual in such a way that he himself will be happy and at the same time make a substantial social contribution in one way or the other.

It is sometimes possible, however, that enrichment can serve dual functions; the first is to develop what the student does best, the strength or talent that the individual possesses; the second, however, can be to motivate the student in areas of weakness. Thus, the desire to do well in one kind of study can possibly be used to motivate the student to do well in other fields, too, and thereby enrichment can be generalized. For instance, consider a student with an extremely high "spatial factor" on a primary mental abilities test but low arithmetic. He might become an architect by reason of his high "S" factor if he can be persuaded to learn arithmetic.

Enrichment, if it is properly carried out, increases diversity among students. This is particularly true of the kind of enrichment that grows out of the strengths and talents of children themselves. Individualizing instruction, however, pushes the teacher in the direction of dealing with children one by one. She is placed in a dilemma, because, for the sake of efficiency, she needs to deal with fairly large groups.

Each teacher has to resolve this conflict by some compromise between total group instruction and total individualized instruction. The extent to which she individualizes instruction probably depends on the temperamental factors of the teacher as well

as on competency and adequacy of facilities. Educators have recently been suggesting, however, that much more individualized instruction can go on within a classroom group than has been thought possible in the past. To what extent such individual instruction will become standard classroom procedure remains to be seen.

In the primary grades, it is very likely that every teacher can adequately individualize instruction and meet the demands of the range of individual differences within her own classroom. At this level of development, differences among children are not so great that they cannot be handled by the teacher in a usual classroom. To do so, however, the teacher needs to relinquish the idea that her particular grade level is her sovereign domain. Teachers need to reach an agreement that will permit them to teach children who are learning at levels both above and below the grade level represented in their classrooms. A third-grade teacher might conceivably have some children reading on fourth- and fifth-grade levels as well as some reading on the second-grade level. Teachers in the early elementary grades should be able to range freely over several grade levels.

As children grow into high school, however, the range of differences increases so that at the ninth-grade level, for example, a teacher may have youngsters reading at the sixth-grade level as well as some reading on the junior and senior high school level. Interests, maturity, and sophistication may also be as widely divergent. In the high school, therefore, administrative arrangements should be made to provide enrichment of the curriculum for the gifted child. This is just as important as remedial work and special education for the below average child.

CURRICULAR ADAPTATIONS FOR THE ACADEMICALLY TALENTED

In this section we shall examine some of the areas of the traditional curriculum to see to what extent they are being modified in order to educate the superior student more adequately.

As might be expected, in view of the recent concern about our national scientific prestige, suggestions for the most radical changes in the basic curriculum for the education of the gifted are being made in the field of mathematics.

Mathematics.—The current decade represents an era in which more attention is being paid by professional mathematicians to the mathematics curriculum than ever before. A wide variety of approaches are being tried;⁸ most have this in common: they are being tried out on the gifted and seem to be most appropriate to them. They represent attempts to teach *pure* mathematics rather than the applications of mathematics. Learning abstract mathematics probably takes more ability than learning applied mathematics. Since the programs are being tried out almost exclusively on the gifted, there is some question whether these programs will change mathematics teaching for average children to any extent.

The traditional method of teaching mathematics has emphasized the deductive expository teaching method. The School Math Study Group Program headed by E. G. Begle is a program of this kind. It begins in the seventh and goes through the twelfth grade. Although much richer in content, it is essentially the same as the orthodox method.

A rather different approach, represented by the work of Max Beberman at the University of Illinois and Robert B. Davis at Syracuse University, emphasizes the inductive method of teaching, using the principle of discovery. It apparently works very well with bright pupils and may be seen as enrichment by process rather than by addition content.

Some of the studies are forcing educators to change their concept of what children can learn in mathematics. Newton S. Hawley, at Stanford University, for example, is teaching geometry to second-graders. W. W. Sawyer, at Wesleyan University is teaching algebra in the fifth grade.

It remains to be seen what permanent effect upon the mathematics curriculum these efforts will have.

Modern foreign languages.—Developments in the field of modern foreign languages have been brought about primarily through advances in the program of teaching foreign languages in the elementary schools. In a recent study of the teaching of modern foreign languages, comparison is made among a ten-year

⁸The studies cited in this section are reviewed in *Studies in Mathematics Education* (Chicago: Scott, Foresman & Co., 1960), pp. 4-7, 59.

program, a six-year program, and a four-year program of teaching.⁴ The ten-year program begins in grade 3, the six-year program in grade 7, and the four-year program in grade 9. In evaluating the effectiveness of these programs, the report concludes: "The longer program is better for two reasons. It results in a notably higher degree of linguistic control and exposes the student for ten highly formative years to concepts of another culture and civilization." This approach is basically enrichment through acceleration.

The report recommends that should schools move as rapidly as possible from a four- to a six- and then to a ten-year sequence. The report bases the recommendation on the fact that lengthened and accelerated learning of modern foreign languages is essential to the preparation of the academically talented for leadership in a world that sorely needs the benefit of fully developed talents.

Science.—The major characteristics of changes in the science curriculum are that it is begun earlier and that it tends to be intensified. A bright student today in many high schools in America can get enough science to excuse him from one or more freshman science courses at the college level.

Perhaps the most outstanding need in the field of science is to develop creativity in scientific endeavors. In order to accomplish this, a good deal more reliance might be placed upon inductive teaching and discovery than upon expository deductive teaching.

English.—The English curriculum apparently is undergoing no radical transformation.⁵ Honors courses may be offered in high school. These are often essentially college courses. Although it is recognized that the academically talented students will have to use language and public speaking in discussion, in

⁴ Wilmarth H. Starr, Mary P. Thompson, and Donald D. Walsh, *Modern Foreign Languages for the Academically Talented* (Washington: National Education Association Project on the Academically Talented Student, 1960), p. 62.

⁵ Arno Jewett, *English for the Academically Talented Student in the Secondary School* (Washington: National Education Association Project on the Academically Talented Student and National Council of Teachers of English, 1960), pp. 50-67.

research, and in professional writing, there is little evidence of this in the curriculum.

It is suggested that enrichment in English in the regular program be accomplished through broader courses, supplementary activities, and correlation with other subjects; through reading, writing, and speaking; and through extracurricular activities and the use of community resources. While there appears to be some acceleration in honors courses, the rest is primarily lateral enrichment.

Social studies.—The social studies curriculum still seems to concentrate heavily on providing common citizenship training for the majority of American youth and makes little special educational provisions for the development of leadership for the gifted minority. Increasing attention is being paid to non-Western societies. Some college subjects, such as economics, psychology, political science, sociology, and anthropology, are now being recommended for the high school curriculum. Certain methodological procedures are also suggested for bright high school students, as well as enrichment through independent studies, broad coverage of many topics, emphasis upon organizing principles rather than isolated facts, integration and correlation with other courses. The approach is basically horizontal enrichment by adding more content.

Coleman suggests a method of teaching social studies inductively, that is, through the process of discovery.³ Through the use of recently developed devices called "political gaming" or "management gaming" it might be possible to produce social situations in miniature from which principles of politics, economics, and human relations might be drawn. These approaches, similar to role-playing, have been tried at the RAND Corporation and Massachusetts Institute of Technology. To what extent they could be modified for use among gifted children in the high school, is not known.

Summary of curricular changes.—It would appear that the most basic experimentation with the curriculum has occurred in

³ James S. Coleman, "Academic Achievement and the Structure of Competition," *Harvard Educational Review*, XXIX (Fall, 1959), pp. 348-51.

areas where pressure has been applied most severely. Mathematics has come under the scrutiny of professional mathematicians, and some fundamental innovations are being experimented with in order to improve the scientific and technical training of gifted students. Changes in the science education curriculum have been primarily in the nature of acceleration, that is, condensing the curriculum and streamlining it. Changes in the foreign language curriculum have also been in response to our growing awareness of our position of leadership in the world. Changes in the social studies curriculum to include non-Western cultures are also in response to the growing awareness of our new position as a nation.

Pressures have not been applied heavily in the areas of social studies generally or in English. In these areas fewer innovations are being made that are directly applicable to gifted students. Enrichment of the common curriculum appear to be the rule in English and social studies. Some acceleration is being recommended in science, mathematics, and particularly foreign languages.

QUESTIONS FOR STUDY AND DISCUSSION

1. Is there a relationship between one's concern with individual differences and his views on the need for special objectives for the education of gifted children?
2. In what ways are objectives of education for the gifted the same and different from objectives for all children?
3. Give specific ways in which a teacher's objectives will influence what, how, and who he teaches.
4. Suggest ways whereby objectives can become more than a fancy statement of philosophy that is filed away and never used.
5. How does the curriculum express educational objectives and the values of society that society believes to be important?
6. In what ways have curricular offerings for the gifted changed in recent years?
7. Summarize the changes that have taken place in curriculum since the 1950's.
8. What changes do you foresee in the curriculum in the future for gifted students?

Administrative Provisions: Classroom Enrichment, Acceleration, and Grouping

The terms classroom enrichment, acceleration, and grouping refer to the administrative or organizational arrangements that can be made in order to facilitate enrichment of the curriculum for gifted students. Each of the three methods represents a logically independent way of making enrichment possible. In practice, however, the three methods are combined and adjusted so that rarely, if ever, is a single approach used exclusively. They are generally combined so that presumably the strengths of each method can be enhanced and its disadvantages minimized.

PRINCIPLES OF CLASSROOM ENRICHMENT

The general term "enrichment" was discussed in the previous chapter. Classroom enrichment, or "enrichment in the heterogeneous classroom" refers to the arrangement in which the classroom teacher is expected to differentiate the curriculum according to the needs of the gifted within the context of his usual class organization. In practice this means that the teacher must find ways of enriching the learning experiences of perhaps three or four pupils out of the twenty-five to thirty children in the

class. In chapter x, practical suggestions are made for carrying this out.

Most school programs reported by Kough¹ include classroom enrichment as one of the provisions made for the gifted. Only a few of them report that classroom enrichment is the only provision. Examples of these are Chula Vista, and Lemon Grove, California. They also, however, added interest club programs. San Diego stresses classroom enrichment, avoids special grouping, and practices some acceleration. Portland, Oregon, emphasizes classroom enrichment plus some special grouping in each elementary school. Classroom enrichment seems to be especially appropriate at the early elementary school level.

There are many arguments for and against enrichment in the heterogeneous classroom. Unfortunately, there is very little research that can be used to support arguments on either side. Most of the arguments, therefore, probably are drawn from mixed sources such as one's philosophy of education, practical problems involved in administration and teaching, school administration, and community values.

ARGUMENTS FOR CLASSROOM ENRICHMENT

Arguments for keeping gifted children in the regular classroom and enriching their educational program there are the following:

Democratic values.—A persistent value in the American society is that which is contained in the Horatio Alger myth, namely, that anybody can rise from the bottom and go all the way to the top if given the necessary opportunities. Presumably, this route is left open only so long as children of all varieties are kept in the heterogeneous group in the classroom and given the same learning opportunities. Furthermore, it is maintained that gifted children need to practice and become successful in leading all kinds of children in a leader-followership relationship, and this can best be done in the regular classroom.

Stimulate average and slow children.—An argument related to the one above is that gifted children often stimulate other children in the classroom. The removal of the top echelon of

¹ Jack Kough, *Practical Programs for the Gifted* (Chicago. Science Research Associates, 1960).

students removes a necessary source of stimulation for other children.

Stimulate the teacher.—A less often mentioned point in favor of enrichment in the heterogeneous classrooms is that teachers enjoy teaching a class that has some "spark" in it.

Classroom enrichment is essential.—No matter what other devices are instituted in a school, classroom enrichment is always the backbone of the program. That is, enrichment needs to go on in every classroom and cannot be relegated to the teacher who has a special group of gifted children. This would seem to say that enrichment is an important part of the work of every classroom teacher.

Lack of adequate basis for special grouping.—In view of the difficulty involved in finding an adequate basis for special grouping, it is better to keep the children in the regular classroom. Children grow at uneven rates. They do not advance on all maturational levels at the same rate. Therefore, a given child may profit from an advanced group in one subject or project but may fall far behind in another subject in which he is average or even below.

Self-enrichment.—Gifted children are not necessarily bound to the curriculum of the average classroom but can use it as a starting point for their own beginning of enrichment. They pick up interesting and stimulating ideas on their own because they are alert. This would place the burden of enrichment upon the gifted child himself.

ARGUMENTS AGAINST CLASSROOM ENRICHMENT

For those who believe that classroom enrichment is not adequate for a total program for the gifted, the following arguments have considerable force:

It doesn't work in the average classroom.—An acute observer writing of enrichment in the regular classroom in 1940 said, "The principle objection to classroom enrichment for gifted children in the heterogeneous classroom is that in most cases it fails to work. Teachers are human beings with all the failings of human beings. Consequently, most of them prefer teaching procedures which require the least amount of time. They find it

much easier to teach the class as a unit than as a loosely organized group or subgroups and individuals." ² In short, classroom enrichment imposes too heavy a burden upon the teacher.

Heterogeneous classroom does not automatically insure democracy.—Within the classroom itself, organized on the heterogeneous basis, there may still be deep cleavages among the pupils. These cleavages may be based upon socioeconomic lines, along ability lines, along sex lines. There may be very little communication across these lines. An educator may be less likely to try to erase these cleavages when they occur in the regular classroom because of the easy assumption he may make that heterogeneous classrooms stimulate democracy. The teacher may, therefore, be lulled into thinking that all is well with the democracy in his room when indeed it may not be.

Stimulation does not automatically occur in the heterogeneous classroom.—Along the same arguments as the one listed above, is the argument that placing a bright student and a dull student in the classroom does not automatically insure that the dull student will be stimulated by the bright one. He may very well be disheartened and discouraged by the attainments of the more advanced student. Furthermore, by removing the fast-thinking aggressive leaders from the classroom and putting them in a special group, the second echelon of leadership in the classroom may have a chance to come forth.

Furthermore, stimulating the class is basically the job of the teachers, not pupils. If the pupils are required to do this, it may be at the expense of their own learning.

Enrichment increases diversity.—A point is eventually reached when diversity is greater than likeness and the group can no longer be dealt with as a group. Tutorial teaching is required. This is out of reach of most schools and is probably educationally undesirable as well.

RESEARCH ON CLASSROOM ENRICHMENT

There are relatively few reports of research on the efficacy of classroom enrichment for providing practical programs for the

² Herbert A. Carroll, *Genius in the Making* (New York: McGraw-Hill Book Co., Inc., 1940), pp. 246-47.

gifted. Perhaps the difficulty of designing research with adequate controls is the major reason that there are so few studies in this area. The work done in Evanston, Illinois (see chapter vi), gives some evaluation of classroom enrichment. Two studies, by Washburne³ and Dransfield,⁴ both found that the gifted students profited from working in the regular classroom with no losses in the usual scholastic areas.

When intellectually gifted children are left to themselves in the ordinary school setting, they generally gravitate toward and excel in the subjects which require abstract thought and facility in language. This was brought out clearly by Terman⁵ in his study of gifted children in California. He asked teachers to rate the schoolwork of over five hundred intellectually gifted children, aged eight to thirteen, and also to rate the work of an equal number of control or "average" children of the same ages.

The ratings ran from 1 (superior) to 7 (inferior). Results are shown in Table 5. The gifted excel the control children most clearly in debating, public speaking, United States history, composition, literature, ancient history, and grammar, while there is little or no difference between the groups in shop work, painting, manual training, games and sports, penmanship, and drawing.

Thus gifted children tend to provide their own "enrichment" if left to their own devices, and this is more a matter of enrichment in depth than in extension. Such a situation is far from ideal, since enrichment is most effective when the teacher, too, contributes his ideas, suggestions, and resources to the learning situation.

Gallagher⁶ reports work on the effectiveness of a case-study

³Carleton W. Washburne, "The Attainments of Gifted Children under Individual Instruction," *The Education of Gifted Children* ("Twenty-third Yearbook of the National Society for the Study of Education," Part I [Chicago: National Society for the Study of Education, 1924]), pp. 247-61.

⁴J. Edgar Dransfield, *Administration of Enrichment to Superior Children in the Typical Classroom* ("Contributions to Education," No. 5 [New York: Bureau of Publications, Teacher's College, Columbia University, 1958]).

⁵Lewis M. Terman, *Mental and Physical Traits of a Thousand Gifted Children* (Vol. I of *Genetic Studies of Genius* [Stanford, Calif.: Stanford University Press, 1925]), pp. 258-62. The table appears on p. 261.

⁶James J. Gallagher, "An Evaluation of Individual Enrichment of Gifted Children in Elementary Schools" (Urban: University of Illinois [mimeographed], 1959).

TABLE 5

ORDER OF SCHOOL SUBJECTS WITH RESPECT TO DIFFERENCES
IN QUALITY OF WORK OF GIFTED AND CONTROL GROUPS

Subject	All Gifted	All Control	Difference
Debating or speaking.....	2.04	3.88	1.84
U.S. History.....	2.11	3.92	1.81
Composition.....	2.25	3.93	1.68
Literature.....	1.90	3.56	1.66
Grammar.....	2.25	3.76	1.51
Ancient history.....	2.04	3.60	1.56
General science.....	2.35	3.78	1.43
Geography.....	2.26	3.67	1.41
Civics or citizenship.....	2.12	3.49	1.37
Reading.....	1.92	3.26	1.34
Arithmetic.....	2.52	3.80	1.28
Spelling.....	2.13	3.39	1.26
Dramatics.....	2.40	3.64	1.24
Nature study.....	2.57	3.66	1.09
Agriculture.....	3.28	2.96	.69
Singing.....	3.24	3.89	.65
Folk dancing.....	2.86	3.45	.59
Cooking.....	3.06	3.63	.57
Physiology or hygiene.....	2.72	3.28	.56
Instrumental music.....	2.89	3.38	.49
Physical training.....	3.25	3.60	.35
Sewing.....	3.11	3.41	.30
Drawing.....	3.63	3.87	.25
Modeling.....	3.48	3.64	.16
Penmanship.....	3.79	3.92	.13
Games and sports.....	3.41	3.52	.11
Manual training.....	3.49	3.60	.11
Painting.....	3.71	3.80	.09
Shop work.....	3.57	3.50	.07

approach for enriching the environment of highly gifted children in an elementary school program. Fifty-four highly gifted children with Binet I.Q. of 150 and over in grades 2 through 5 were examined by the case-study method. An enrichment program was planned for each child on the basis of the individual need revealed in the case study. It was the responsibility of the classroom teacher to carry out this enrichment program, although he could use supplementary services—for example, speech correction, counseling, and curriculum advice—that were available.

In evaluating the program, parents and teachers reported that they had observed considerable gains in their children in all areas of development although they failed to agree on which children showed gains. The objective test results failed to substantiate

the positive evaluation in areas of academic achievement, self-concept, or social status. Since the objective tests did not measure such characteristics as motivation and creativity, it may be that meaningful changes in attitude toward school work was brought about in many of the children. Furthermore, since one-fourth of the children were making close to maximum adjustment prior to the initiation of the program, and substantial growth was not to be expected from them.

In discussing the results, Gallagher indicates that part of the reason there were no clear-cut gains may have been that teachers were unable to carry out suggestions because they lacked competency in teaching methods or curriculum skills, because auxiliary facilities were inadequate, and because the school was unable to deal with basic personality and emotional problems which originated in the home.

The results of the study agree with Terman's observation that when ability is very high, for example, over 150 I.Q., motivational and emotional factors become of primary importance.

Research on the benefits of special homogeneous grouping is also relevant to the question of the benefits of classroom enrichment. A little later in this chapter we will deal with research on special grouping.

CRITERIA FOR CLASSROOM ENRICHMENT

The following criteria help in assessing classroom enrichment.

1. Pupils have been identified according to the talents and abilities they possess. The teacher has drawn up a list of the names of the students and is cognizant of the methods and instruments he has used to identify them. That is, he has attempted to control his own biases in observing through the use of some objective means of identifying the talents of students.

2. Specific educational objectives for identified pupils have been formulated. The teacher attempts to obtain them in the enrichment of the program of the gifted children in his regular classroom.

3. The teacher has a curriculum or a set of learning expe-

riences for these bright youngsters that are related to her educational objectives.

4. All the teachers in the school or in the school system co-operate in these procedures.

5. The necessary materials and facilities are available to carry on enrichment within the classroom.

6. The class is not too large to prevent individual enrichment.

PRINCIPLES OF ACCELERATION

Acceleration refers to the time element in education, that is, progressing through the curriculum at a more rapid pace than normal. It means providing learning experiences at a rate commensurate with speed of learning.

Acceleration is relative to the learning pace of a hypothetically average pupil. The pace of learning for the bright student, however, is not accelerated from his own point of view—for him it is natural.

Teachers observe acceleration every day in the classroom, but most of them fail to follow up implications of what they observe. Instead, they allow students to fill in large blocks of left-over time with other learning experiences having various degrees of relevance and value.

Many schools make some provision for acceleration. In the special progress classes of the junior high schools in New York City children whose I.Q. is 125 or more, who are physically and emotionally fit, whose achievement in mathematics and reading is superior, and whose parents consent to it are allowed to complete three years' work in two.

ARGUMENTS FOR ACCELERATION

There are many heated debates over acceleration. The kind that was practiced a generation or more ago—grade skipping—has been the source of many negative arguments. But arguments favoring acceleration are based on a somewhat different meaning.

Research findings favor acceleration.—Passow says, "The weight of experimental evidence tends to support the position of academic gains through acceleration of the gifted student at all levels. Research into the effects of acceleration on social and

emotional adjustment has generally demonstrated no serious detrimental results." ⁷ Later he states in a more positive vein, "On the basis of available research, there appears to be no issue as to whether or not some forms of acceleration should be used in school programs to provide needed flexibility." ⁸ Description of these researches will be given in a later section.

Considerations from the years of productivity.—Studies by Lehman⁹ indicate that most outstanding creative work is done early in life rather than late. Acceleration allows for the completion of training before the creative individual reaches the peak of his productive years. This can be especially important in the fields of physical sciences, mathematics, and inventions.

Arbitrariness of the traditional age-grade sequence.—The negative argument for acceleration is that the traditional pattern of moving through the sequential grade levels is at best arbitrary and geared to the hypothetically average pupil. The facts of child development indicate that children grow and learn at different rates. There should be no argument about the desirability of allowing each child to learn at the pace that is natural and adequate for him.

Economy.—Allowing progress at a natural pace will save money and time for the school and frustration for the student.

ARGUMENTS AGAINST ACCELERATION

Arguments against acceleration are based partly on fears of the detrimental outcomes on social and emotional development of children and partly on different conceptions of the nature of the educative process.

Detrimental to the social and emotional development of the child.—Although research findings do not uphold the notion that acceleration is detrimental to the child, it still persists.

⁷ A. Harry Passow, "Enrichment of Education for the Gifted," *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II. Prepared by the Yearbook Committee, Robert J. Havighurst, et al., and edited by Nelson B. Henry [Chicago: National Society for the Study of Education, 1959]), p. 224.

⁸ *Ibid.*, p. 219.

⁹ Harvey C. Lehman, *Age in Achievement* (Princeton, N.J.: Princeton University Press, 1953).

Wilson, in a questionnaire study,¹⁰ found that fewer than half of the respondents were in favor of the acceleration to the extent that Professor Terman favored it. Thus, opinion against acceleration continues even though the mass of research studies favors it. The situation is somewhat analogous to the stereotype conception that people have long held and still hold about the nature of giftedness. It dies, but slowly.

Acceleration does violence to the nature of education.—Education should provide opportunities to integrate, synthesize, and assimilate learning experiences, not just to develop skills in a rapid sequence. The kind of learning involved in integration cannot be accelerated but takes time for reflection and pondering.

REVIEW OF RESEARCH ON ACCELERATION

After twenty-five years of studying talented children, Terman recommends that, "children of 135 I.Q. or higher should be promoted sufficiently to permit college entrance by the age of seventeen at the latest, and that a majority in this group would be better off to enter at sixteen."¹¹ Terman and Oden concluded that "the influence of school acceleration in causing social maladjustment has been greatly exaggerated."¹²

During the 1950's there has been renewed interest in the research on acceleration.¹³ Studies by Birch¹⁴ and by Worcester¹⁵ have shown that children of I.Q.'s of 130 or higher who were admitted to the first grade below the chronological age of five years and seven months did very well in their later school years, provided they also showed superior social, emotional,

¹⁰F. T. Wilson, "Educators' Opinions about Acceleration of Gifted Students," *School and Society*, LXXX (October 16, 1914), 120-22.

¹¹Lewis M. Terman and Melita Oden, *The Gifted Child Grows Up* (Stanford, Calif.: Stanford University Press, 1947), p. 275.

¹²*Ibid.*, p. 281.

¹³Daniel C. Shannon, "What Research Says about Acceleration," *Phi Delta Kappan*, XXXIX (November, 1957), 70-73; Passow, *op. cit.*, pp. 215-19; Louis A. Fliegler and Charles E. Bosh, "The Gifted and Talented," *Review of Educational Research*, XXX, No. 5 (December, 1959), 410-32.

¹⁴Jack W. Birch, "Early School Admission for Mentally Advanced Children," *Exceptional Children*, XXI (December, 1953), 84-87.

¹⁵Dean A. Worcester, *Education of Children of Above Average Mentality* (Lincoln: University of Nebraska Press, 1955).

and physical maturity and reading aptitude at the time they entered school.

A school may set up an accelerated program for all its students, as does the University of Chicago Laboratory School, which covers the usual eight years of elementary school in seven years and thus graduates its students from high school a year earlier than the ordinary school. The program of this school is one of enrichment and the average I.Q. of its students is about 125 or 130.

Justman studied ninety-five students from the special progress classes in New York City, who had taken three years of junior high school work in two and found they matched an equal number on non-accelerated students: there was little or no difference in the academic achievements, personal and social adjustments, attitudes and interests of the two groups despite the difference in age and years of schooling.¹⁶ This study is reported in greater detail a little later in this chapter.

At the senior high school level, Justman compared final grades and Regents marks of accelerants and non-accelerants in a follow-up study.¹⁷ They showed few significant differences and indicated that rapid progress had not decreased academic performance. A study of acceleration in college is reported in the next chapter.

Formerly, acceleration was accomplished by the simple device of skipping grades with little accompanying guidance or attempts to fill in gaps that were missed in the process. Now open to educators are many other more sophisticated devices for accelerating gifted students, such as allowing early entrance at the kindergarten level. Early entrance into any higher level of the educational sequence requires compressing the time element. This can be done through such devices as the ungraded primary program in which the grade lines are erased and pupils are per-

¹⁶ Joseph Justman, "Personal and Social Adjustments of Intellectually Gifted Accelerants and Non-accelerants in Junior High Schools," *School Review*, LXI (November, 1953), 468-78; "Academic Achievement of Intellectually Gifted Accelerants and Non-accelerants in Junior High School," *School Review*, LXII (March, 1954), 142-50.

¹⁷ Joseph Justman, "Academic Achievement of Intellectually Gifted Accelerants and Non-accelerants in Senior High School," *School Review*, LXII (November, 1954), 469-73.

mitted to do the primary work at their own rate of speed. Faster students can perhaps save a year by telescoping but not neglecting the work of the primary level. Time can be compressed over the whole span from kindergarten through twelfth grade, as it is at the University of Chicago Laboratory School.

The critical elements in predicting success for acceleration were studied by Antonia Morgan.¹⁸ Her subjects were twelve accelerants and eleven non-accelerants. The best predictors of successful acceleration were reading and vocabulary levels (at least one year above grade level), spelling and arithmetic computation (at or above grade level), and positive attitudes of parents toward acceleration. Social maturity, the attitude of the teacher and emotional stability of the students were not used for criteria.

ACCELERATION AND THE MEANINGFUL USE OF TIME

Another basis for judgment on the value of acceleration lies in consideration of the best ways of using time at various ages in life. The life cycle may be divided into four segments, each with a special emphasis on the use of time. Childhood is a time of adjustment to the social environment through play. Adolescence is a time of play, study, and work. In adulthood work predominates, with only incidental play and study. Old age is a time to reduce work and enjoy leisure.

When one's time in school is shortened, childhood and adolescence are compressed, and adulthood is lengthened. Is this better than enjoying enriched experiences during childhood and adolescence? Clearly, a value judgment must be made to answer this question.

The question might be answered differently for people who need different amounts of study in preparation for a vocation. For instance, a gifted boy who is almost sure to further his study in law school or medical school or graduate school will have a prolonged adolescence, if the end of adolescence is defined as the time when a person becomes self-supporting. It might be

¹⁸ Antonia B. Morgan, "Critical Factors in Academic Acceleration of Gifted Children; Hypothesis Based on Clinical Data," *Psychological Reports*, III (March, 1957), 71-77.

well for this boy to be accelerated in school as much as two years, so that he can get through adolescence in his mid-twenties. On the other hand, a gifted boy who is likely to enter business after four years of college might well take a full fourteen years for his schooling, if he can secure a really rich educational experience during all these years. There might not be much *advantage to accelerating him and turning him out as an "adult" businessman at twenty rather than twenty-two.*

In a society where the average length of life is being increased through better health services, it is necessary to ask whether people will be happier and more productive by having their years of adulthood lengthened even more by acceleration in school. Perhaps a wiser approach would be to provide happier and richer experiences for children and adolescents.

CRITERIA FOR ACCELERATION

1. Consideration must be given to the entire child. Is he physically, emotionally, socially, as well as academically, able to do advanced work?

2. If the pupil is to be moved into an advanced grade, both the pupil and the new group have to be prepared for the move.

3. Many varieties of acceleration are possible and should be considered: holding the pupil with his age group but providing him with advanced work, such as doing three years' work in two, doing college work in high school, and entering early into kindergarten.

4. Accelerating particularly skill subjects and those subjects that comprise a rather clear sequence, such as reading, mathematics, foreign languages.

PRINCIPLES OF GROUPING

Grouping refers to the organization of students into administrative and instructional units in order to facilitate the attainment of educational objectives. Grouping is often necessary from the administrative standpoint in order to organize and bring the limited educational resources to the greatest number of students. For instruction, grouping is needed in order to capitalize upon students' similarities that facilitate instructional procedures.

Some form of grouping is inevitably a part of the usual school program. When schools grow to a certain size, it is desirable that they be broken into subunits for administrative and instructional purposes. Furthermore, a kind of natural selection occurs which is a form of grouping.

The first selection or grouping is in terms of social and economic factors. Schools can be considered to be organized and grouped according to the neighborhoods they serve. Large central comprehensive high schools have maximum heterogeneity. Maximum homogeneity occurs in smaller high schools in relatively homogeneous communities.

Age-grade grouping is familiar and well accepted. Age as a criterion for grouping is somewhat arbitrary but has the advantage of being neutral and completely objective. Classrooms themselves are a form of grouping. Various means are used to group children in classrooms, most of them arbitrary, such as by alphabetical order. Finally, within the classroom itself, it is normal for a teacher to group for instructional purposes. Thus, various levels of reading groups in the primary grades are practically universal.

In any case, it seems clear that administrators should strive to design grouping that will free a maximum amount of each student's energy for academic attainment.

BASES FOR SPECIAL GROUPING FOR THE GIFTED

Grouping of students in connection with education of the gifted is generally referred to as "special grouping" or "homogeneous grouping" to distinguish it from the normal instructional and administrative grouping described above. Groups may be selected on the basis of ability, interests, or special aptitude. On the face of it, ability would seem to be an adequate criterion for grouping. The term itself, however has always created a problem of definition among educators. At the most unsophisticated level, ability may be defined in terms of a single metric such as the I.Q. Since the I.Q. is primarily a measure of academic aptitude and is rather highly correlated with achievement, the I.Q. is a rough criterion for groups that will participate in verbal, academic learning activities. However, the term is here broadened to include a number of other abilities besides academic.

Each of these in turn, can be used as a criterion for grouping. Nonetheless, ability tends to be used rather loosely as if there were a single ability and youngsters could be put into groups on the basis of the degree to which they had it.

A further problem in using ability as the basis for grouping is the extent to which abilities are general or situational. That is, do specific situations significantly increase or decrease a pupil's abilities? Is intellectual activity, for instance, affected by the social and emotional aspects of a group? If abilities arise only in certain situations, they are poor criteria for establishing homogeneous groups.

Perhaps the most extensive study relating to the question of generality of ability has been made on leadership ability. The conclusion seems to be that leadership is both situational and general. Some persons display leadership characteristics in nearly every group in which they may be found; yet the group does exercise some control over the nature and extent of their leadership. The same conclusion probably holds for other abilities as well.

Thus, "ability," if it can be defined sufficiently to permit selection, probably can be used as a relatively stable basis for grouping.

Grouping on the basis of interests is another acceptable method, since interests do not form the basis for making invidious distinctions among children.

Grouping by rather highly specialized aptitudes is used rather widely. Music groups, creative-writing groups, and photography clubs are rather common, both in the regular curriculum and in the extracurricular activities, particularly at the secondary level.

Educators who are considering means of grouping should bear in mind a very important consideration, that is, we do not group *in general*. Grouping should be related to specific objectives and kinds of abilities. We should group for specific situations, specific aptitudes, and specific interests. Each situation has its own cluster of objectives and special requirements.

The real problem in grouping arises when the criteria used for selecting members have strong values attached to them. Intel-

lectual ability is such a value-laden basis, at least in the adult world and, we are persuaded, to an increasing degree in the adolescent world, too. As long as intellectual prowess and academic training have high prestige value, there will probably continue to be conflict over its use as a criterion for grouping.

There is probably more variety in grouping practices than in any other administrative provision. Practice in grouping ranges all the way from temporary reading groups in a regular classroom to permanent special grouping by classroom, as in the Cleveland Major Work Program, and to the special high schools for the gifted found in New York City and elsewhere. Part-time grouping has many varieties. In University City, Missouri, gifted children are grouped during certain periods of the day during which an itinerant teacher is in charge. Special groups may be organized as extracurricular clubs that may meet on school time or after school hours. Honors classes as set up in many high schools are a form of special grouping. So is a committee appointed to make a special report for a regular social studies class.

ARGUMENTS FOR GROUPING

The major arguments for grouping are given below. These are also arguments *against* classroom enrichment.

Narrow the range of interfering differences.—Narrowing the range of differences *per se* is not a sufficient argument for ability grouping; it is only when these individual differences interfere with the learning process of the pupils and reduce the amount of energy a student has for studying that they become important considerations. Differences in mental speed, ability to deal with abstractions, and ability to make subtle distinctions are examples of differences that presumably interfere with the learning process of some students if all are given the same learning experiences.

Mutual stimulation.—Students with similar abilities, however defined, tend to stimulate each other and increase each other's motivation. They also are in position to teach each other, thus reducing the burden of the teacher.

Group acceptance.—Students, when they are grouped with

those of like abilities do not have to fear group rejection because of their high level of achievement. They do not need to put the lid on their efforts in order to conform to mediocrity.

Greater achievement and motivation.—It is asserted, although not conclusively born out by research, that homogeneously grouped youngsters can progress more rapidly, achieve greater insight, and learn more in groups where the curriculum is especially designed for them.

A corrective to smugness.—It is asserted that a bright youngster when working with a group of intellectual peers is less likely to be conceited and smug than when he is working in a group which is below his ability level. His intellectual peers tend to give him a more realistic picture of his abilities than will a group of less equal age mates.

Expedite the use of special teachers and facilities.—It is believed that teachers can be specially trained for working with gifted students and their special training and school facilities can be most effectively used when students are grouped according to their abilities.

Arbitrariness of the age-grade classification.—Those favoring special grouping point out that the present system of organizing children according to ages is no more defensible than organizing them on any other clear-cut criteria. Children of the same age differ in many respects just as children of comparable ability do in many other respects. The fact that age is an objective and neutral determinant does not make it the best criterion.

ARGUMENTS AGAINST SPECIAL GROUPING

Undemocratic.—One of the basic values of American democracy is the opportunity it offers anyone to forge ahead on the basis of his drive, ingenuity, and assertiveness. When ability criteria are used in the formation of exclusive groups, democratic opportunities are denied.

The uncertainty surrounding ability.—The uncertainty of the definition of ability has already been discussed. Still another uncertainty surrounds the measurement of ability. None of the techniques for identifying ability is completely accurate, and until these measurements have the objectivity and certainty of

measurements of age, height, and weight, grouping will be a hazardous procedure.

Obstruction of integration.—One of the values held by many educators is the opportunity for students to deal with a wide range of differences in personality, temperament, and abilities among their age mates. The ideal person is one who can understand and communicate with people of wide varieties of backgrounds, levels of ability, interests, and motivation. This goal is not attainable when the student population is divided into groups on the basis of ability.

Deprivation.—The students who are put into special groups are deprived of certain opportunities, such as leadership. On the other hand, students who are not in the selected groups are deprived of leadership, and the stimulation and ideas of those who are in the selected groups.

RESEARCH ON ABILITY GROUPING

In a recent review of experimental studies in homogeneous grouping, Ekstrom¹⁹ reported on thirteen studies that favored homogeneous grouping because of higher achievement, fifteen studies that showed no advantage in achievement to special grouping or even found homogeneous grouping detrimental to achievement, and five studies which gave mixed results, partially favorable and partially unfavorable to homogeneous grouping. These studies were done in the period 1923 to 1959.

An example of a study that favors homogeneous groupings when accompanied by acceleration is that of Justman,²⁰ as reported by Ekstrom.

Two matched groups of gifted junior high school students were compared by Justman. The experimental groups consisted of students of high ability from homogeneous special rapid progress classes, while the control groups consisted of high-ability pupils from heterogeneous normal progress classes. March-

¹⁹ Ruth E. Ekstrom, *Experimental Studies of Homogeneous Grouping: A Review of the Literature* (Princeton, N.J.: Office of Naval Research Contract Nonr-2214 (00) Project Designation NR 151-174. John W. French, Principal Investigator, Educational Testing Service, 1959), pp. 14-15 and 3-4.

²⁰ Justman, "Academic Achievement of Intellectually Gifted Accelerants and Non-accelerants in Junior High School," *School Review*, LXII (March, 1954), 142-50.

ing was done on the basis of school attended, grade, sex, mental age, chronological age, I.Q., and growth in reading and computational skills at the first stage. From 70 to 104 pairs of pupils were given various tests. Only minor differences between members of pairs were found in reading and computational skills as measured by the Stanford Achievement Advanced Reading Test and the New York Arithmetic Computations Test. The special progress class pupils scored significantly higher, in mathematics and science on the Cooperative tests for these subjects for grades 7, 8, and 9. They also scored significantly higher on the Cooperative Social Studies Test, but the differences here might be accounted for by additional course work or inadequate matching in reading skills. The experimental groups were significantly better in study skills based on the Iowa Every pupil Work-Study Skills Test. Creative expression in the language arts was measured by the Scales for Rating Creative Expression. The experimental group was significantly higher, on three of the six ratings of original stories and significantly higher on five of six ratings of original poems. The group showed little difference in social and personal adjustment and had similar patterns of attitudes and interests. Justman concluded that segregation of gifted children in special progress classes at junior high school level is accompanied by academic achievement superior to that attained by matched pupils in normal progress classes with no detriment to social acceptance, interests, attitudes, and aspects of personality of the pupil in the special groups.

A study by Purdom,²¹ also reported by Ekstrom, showed no difference between homogeneous and heterogeneous grouping. The basis of grouping was scores on standardized achievement tests and first semester marks, using the ninth grade pupils of five different high schools. The experimental and control groups were weighted with respect to age, sex, and intelligence score. That is, pupils were divided into experimental groups of fast, slow, and average ability on the basis of the Terman Group Test. These pupils were compared with pupils of comparable ability but grouped heterogeneously. English and algebra were the

²¹ T. L. Purdom, *Value of Homogeneous Grouping* (Baltimore: Warwick & York, 1929).

subjects in which the groups were compared. No pretest in algebra was given, since none of the students had previous experience in such a course. The Horz Addition and Subtraction Scale and the Equation and Formula Scale were used to compare the groups at the end of one semester. Briggs's English Form Test, Van Wageningen's English Literature Scale, and two parts of the Kirby Grammar Test were used at the beginning and end of the semester for measures of achievement in English. The same teachers taught both groups. Purdom concludes that pupils in homogeneous sections do not gain more than pupils in heterogeneous sections when results are measured by standardized achievement tests.

It is next to impossible to draw stable conclusions from the studies of homogeneous grouping vs. heterogeneous grouping to produce high achievement. The studies differ widely in quality, purpose, and significance. They cover a grade range from elementary school to college, and a wide range of subject matter. Some studies measured achievement in a single area, others in multiple areas.

Some of the weaknesses of the studies are: differentiation of content and teaching according to ability levels in the groups was not provided; the teaching methods were not controlled; experimental groups, composed of children who had volunteered, and control groups, composed of residue children who had not volunteered for the experimental groups, were assumed to be comparable; most of the experiments were too short; available school data was used instead of data collected specifically for the study; to make up special groups for specific subjects, tests of general ability were used rather than tests in the specific subjects; only a few of many possible variables were controlled.

Some conclusions do suggest themselves, however. Experiments which specifically provided for differentiation of teaching methods and materials for homogeneous groups and which made an effort to "push" bright homogeneous classes tended to favor the homogeneous groups. Some studies also indicate that homogeneous grouping favors the slow learner as much if not more than the fast learner. This lead is worth exploring further for the clarification it may throw on the effects of grouping. It may

be that homogeneity is more easily obtained at the low end of the ability spectrum, whereas, at the upper end, homogeneity, because of the diversity of talents, is hard to obtain.

Grouping, per se, apparently makes little difference in the achievement of students. Under carefully controlled conditions it seems to make *more effective enrichment possible for the gifted students.*

Passow states, "Considerable research has been reported under the general heading of 'homogeneous versus heterogeneous grouping,' with no significant unanimity of findings. However, comparative studies of gifted students in regular and special classes on all educational levels tends to be more uniform in denoting beneficial effects of the special classes on academic, personal, and social growth."²²

CRITERIA FOR ABILITY GROUPING

In an effort to evaluate a school's need or capacity to employ some form of ability grouping, two major factors should be considered: the school's facilities and the school's equipment for the identification of ability. Assuming the school can identify the able students, the following considerations of school facilities are important.²³

A. Size of school or school district

1. Is homogeneous grouping physically possible: Are there enough students in each grade so that provisions for the academically gifted or the slow learner will not be a strain on the school plant, or personnel?
2. If homogeneous grouping is impossible, are classrooms sufficiently flexible for intraclass grouping of heterogeneous groups?

B. Facilities within the school

1. In homogeneous classes: Is the school so equipped that the academically talented *may have opportunity to explore beyond the curriculum demands*—are there science laboratories, is there advanced equipment, are there books beyond the reading level of whatever grade the school program terminates in; is there

²² Passow, *op. cit.*, p. 207.

²³ NEA Research Memo, National Education Association of the United States Research Division, *Memo 1958-5 (June, 1958)*, pp. 9-10.

QUESTIONS FOR STUDY AND DISCUSSION

1. Discuss the most important strength and weaknesses of enrichment in the heterogeneous classroom, acceleration, special grouping. Which arguments are supported by research?

2. Describe a school system and community with which you are familiar. What instructional and administrative provisions for the gifted would you recommend for that system? Support your recommendations with arguments from research and with your knowledge of the community.

3. Cite research evidence supporting or not supporting the various approaches discussed in this chapter.

4. Under what conditions might each administrative device work successfully?

5. Would you expect administrators, teachers, or supervisors to support classroom enrichment most strongly? Why? Which of the three would you expect to support acceleration? Homogeneous grouping? Why?

Practices in Educating the Gifted at Elementary, Secondary, and College Levels

In this chapter several concrete examples will be given of school programs in action at various levels. So many good programs are now under way that it is difficult to select outstanding ones.¹ The following illustrate points that need to be made: The Portland Project shows how a large city developed a program early in the present cycle of interest in the gifted. The Demonstration Guidance Project shows how talent can be discovered and developed among "disadvantaged" groups. Evanston is of interest because of the well-conducted research that accompanied the

¹The "classic" programs at the elementary level in Cleveland, Hunter College Elementary School, Colfax School, and University City have been described by Joseph L. French (*Educating the Gifted: A Book of Readings* [New York: Holt, 1959]), and Dorothy Norris ("Programs in Elementary Schools," *Education for the Gifted* ["Fifty-seventh Yearbook for the National Society for the Study of Education," Part II (Chicago: National Society for the Study of Education, 1958)], pp. 222-62); in a recent survey of programs, Jack Kough described work done in 34 schools (*Practical Programs for the Gifted* [Chicago: Science Research Associates, 1960]); and Robert J. Havighurst and others, in an earlier survey, described the work done in 37 schools (*A Survey of the Education of Gifted Children* [Chicago: University of Chicago Press, 1955]). Lloyd S. Michael and others have described programs at the secondary school level ("Secondary School Programs," *Education for the Gifted*, pp. 263-315); and Malcolm S. MacLean and Robert B. Carlson have described college programs ("College and University Programs for the Gifted," *Education for the Gifted*, pp. 316-46).

special equipment to facilitate the instruction of slow learners—audio-visual devices, special books?

2. In heterogeneous classes: Are there sufficient materials available so that different groups may take part in different activities at the same time—books for the talented group to read while others are working directly with the teacher, materials with which slow learners can work while the teacher is working with high-ability students, and facilities enough that the whole class may work on a single project from a variety of angles?
3. Are classes of either type small enough to give the teacher opportunity to study the needs and abilities of pupils and to plan the variety of experiences needed?
4. Is there a well-planned testing program with reports made promptly to teachers, to facilitate the best possible grouping within classes?

C. The faculty

1. Is the faculty equipped to plan and implement special programs for individual students, whether fast or slow learners?
 - a. Can ability grouping be so organized and presented to the students that jealousy and misunderstanding do not arise?
 - b. Will students, if placed in homogeneous classes, have the opportunity to "mix" with other students?
2. Does the faculty feel that they can do justice to the large range of ability to be found in the heterogeneous class?
 - a. Students must be provided minimum skills for independent work in the heterogeneous class; the social climate of the classroom must include control and some set routine so that groups within the classroom do not disrupt and conflict with each other; the teacher must be able to set standards that will facilitate both co-operative group work and tolerance of individual achievement and underachievement.

D. The administrators

1. Co-ordination with the community.
 - a. What activities are provided for students by community agencies, such as the "Y," the Boy Scouts? Can, or should, these agencies share the responsibility for diverse kinds of children?
 - b. How does the community feel about ability grouping? Do parents, in particular, understand its meaning and the ends sought from grouping? Are the bases upon which children are grouped clear to the parents?

2. Co-ordination in the school
 - a. Does the administrator help the faculty in the organization of classes and class work? Does he meet with the faculty to work out special problems created by grouping?

SUMMARY

Enrichment is the most important aspect of the program for educating gifted children. It consists of bringing them learning experiences at a pace commensurate with their learning rate and at a level of complexity commensurate with their intellectual power.

In sequential subjects, such as arithmetic, reading, and science, the most appropriate manner to bring enrichment may be through vertical enrichment or acceleration. Acceleration need not mean taking the child out of his age group and moving him into an older, more advanced group, however. It may mean giving him work at an advanced level within his own age-grade.

In other subjects, such as language arts, and social studies, horizontal enrichment can more easily be practiced than in the sequential subjects. It is in these fields that reflection, integration, and assimilation of learning needs to take place. Broad enrichment with time to integrate many ideas seems to be called for rather than acceleration.

Special ability groups probably do not need to be used prior to the middle elementary grades. Most primary teachers should be able to handle the relatively limited diversity of talents without great difficulty within the regular classroom. In upper elementary and junior high school, special grouping based on talent becomes more necessary. This may take the form of partial grouping, for specific purposes. In high school, honors sections and special seminars can be established to take care of the needs of the gifted.

The administrative provisions for classroom enrichment, acceleration, and grouping are set up to make enrichment possible and to release significant amounts of the student's energy for learning. More carefully devised research needs to be done in order to ascertain the efficacy of these provisions.

project. Several college programs are described because they show the feasibility of acceleration and because they illustrate the role of the college in developing talent.

THE PORTLAND, OREGON, PROGRAM FOR THE GIFTED

In 1952 the Portland Board of Education² embarked on an experimental project to determine what type of program would offer better learning opportunities for the intellectually able and talented children. Reed College was also interested in co-operating with the Portland schools to develop studies and assist in teacher education. The project was financed initially by the Fund for the Advancement of Education. The Portland program illustrates many of the principles of definition, identification, administration, programing, and evaluation discussed in this book.

In the initial stages of the project a liaison committee was established between the Portland Public Schools and Reed College. The functions of this committee were to facilitate co-operation between the schools and the college, develop policy for the program, and act as an advisory council to the administrative director of the program. The administrative director was appointed by the superintendent of schools. His principal duties were (1) to co-ordinate the work of the various school committees, (2) to direct the procedures of identification with the help of specialized assistance, (3) to help members of the school staff in adapting and evaluating the programs, (4) to exercise general supervision over the program for the eleventh and twelfth grades, and (5) to formulate plans for the development and extension of the program.

A consultant from the faculty of one of the elementary schools was appointed to the project to work with all the schools in the program. The duties of the consultant were to make regular calls in the elementary schools, assist principals and teachers in each school's program, collect instructional material for teachers, suggest personnel resources, and assist in the development of inservice education for teachers.

²*The Gifted Child in Portland: A Report of Five Years of Experience in Developing a Program for Children of Exceptional Endowment* (Portland, Ore.: Portland Public Schools, 1959.)

The program was begun in four pilot high schools and ten pilot elementary schools. The schools were selected in such a way that the various socioeconomic levels and geographic areas of the city were represented.

PLANNING AND INSERVICE EDUCATION

Prior to the first year of the program, a summer workshop was held at Reed College for the principals from the pilot schools, teachers, district supervisors, directors, superintendents, and observers from the PTA.

Four major areas were studied by committees in the workshop: identification and evaluation, elementary school program, high school, and public relations. Some of the committees continued to work during the first year of the program in 1952, when the program was established in the pilot elementary schools and the pilot high schools.

DEFINITION AND IDENTIFICATION OF GIFTEDNESS

The identification committee in the 1952 summer workshop recommended that the definition of giftedness employed in the Portland Program include approximately the upper ten per cent of the most intellectually talented pupils and also the same proportion of the most talented in each of the seven aptitudes. The special aptitudes to be included were art, music, creative writing, dramatics, dance, mechanical talent, and social leadership. That there would be considerable overlap among these talents was recognized. In actual practice, the percentage of students identified for one or more talents was between 15 and 20 per cent. The identification program in the elementary schools consisted of objective intelligence tests for screening for intellectual talent, an observation sheet to supplement the tests, a personality guide sheet, an interest inventory of sociogram and anecdotal records. The project also made special efforts to screen for special talent. For each of the seven kinds of special talent included in the definition of giftedness, special screening devices were developed.

At the high school level a number of tests of mental ability

and educational development were used and the results were available for the selection of students for the program.

ELEMENTARY SCHOOL PROGRAM

Enrichment of the curriculum in the elementary school is carried on in the home room. Curricular units were broadened at all the grade levels to provide ideas, suggestions, and materials to make deeper study possible for bright children. Beside the home room enrichment program, however, special-interest groups were established in the elementary schools. A special class schedule for a typical school follows:

Class	Number of Students	Grades Involved	Time
1. Science.....	17	5-8	2:05-3:30
2. Creative writing.....	16	6-8	12:45-2:05
3. Mathematics.....	14	7	9:40-10:30
4. Art.....	20	5-7	2:05-3:30
5. Music theory.....	11	7-8	2:30-3:30
6. Typing.....	10	7-8	12:45-1:25
7. Creativity (general).....	18	5	10:20-11:00
8. Social leadership.....	30	4-8	9:00-9:40

ADMINISTRATIVE PROVISIONS

In each elementary school, the principal was the key figure in the development of the program. His attitudes toward the program strongly influenced the attitudes and actions of the teachers on the school faculty.

A teachers' steering committee was established in each school to help plan the programs. Some of their functions were to help the principal establish the policies of the school's program for gifted children; to determine the need for special-interest classes, and to help establish them; to resolve those conflicts which arise naturally in the progress of the program; to help the principal and co-ordinator plan professional and informational meetings for members of the faculty. The steering committee was instrumental in involving a large number of teachers in the development of the program.

A teacher-co-ordinator was selected from the staff by the principal and released from half his teaching duties to work on the program. The activities of the teacher-co-ordinator varied

somewhat from school to school. The co-ordinator, generally acting as chairman of the steering committee, planned the over-all program of the school along with the principal and the committee. The co-ordinator assumed the responsibility for seeing that the plans determined by the steering committee and approved by the principal were carried out. The co-ordinator was also responsible for keeping records and for seeing that identification procedures were followed. The regular classroom teacher often needed help in planning and carrying out enrichment activities for pupils in class. Providing such help was another co-ordinator's responsibility. He also helped select pupils for the special-interest classes, surveyed the teaching staff for teachers to conduct these classes, and sought to provide books and materials for the classes. The co-ordinator met with the teacher-consultant of the gifted-child program who visited the school on regular schedule. The co-ordinator also helped the principal plan and conduct professional meetings and inservice classes in the building. He also prepared reports, bulletins, and reading materials and found various ways of stimulating faculty interest.

Special-interest-class teachers planned and conducted the special-class program, helped in the selection of the pupils for the class, evaluated the performance of the pupils and interpreted the activities of the special-interest class to the home room teacher and to parents.

Many schools also appointed test co-ordinators or talent-selection committees to select children with talent in art, rhythm, dramatics, social leadership, music, and creative writing.

In the Portland Program, the home room teacher in the elementary school carried a large measure of responsibility for the success of the program. He assisted in the identification of gifted pupils by giving tests and by personal observation. He planned and carried out enrichment activities for the gifted pupils in the home room and served on committees to further the goals of the program. Unit teaching, small-group projects, and individual projects were some of the enrichment methods used. He was responsible for using the pupils' special-interest-class work to augment their home room program. Full co-operation between

home room teachers and special-interest-class teachers was necessary to a good instructional program for the individual gifted pupils.

In evaluating the program, administrative arrangements and relationships were studied. The teachers said the additional half-time teacher-co-ordinator in the building was the most important factor in the success of the program. They also said they needed more time to prepare for the enrichment procedures.

DEVELOPMENT OF THE PROGRAM IN THE HIGH SCHOOLS

From the beginning, the key person in the development of the enrichment program in each high school was the principal. Additional teachers were provided in each school, the number depending on the size of the school. Larger ones had two full-time and one half-time teachers added to the faculty. They taught special classes for the intellectually gifted and talented students, and their additional services released a member of the high school faculty to serve as the co-ordinator of the enrichment section of subject courses. This co-ordinator was appointed by the principal. Each high school also had a steering committee appointed by the principal. The college consultants, from Reed College, served as advisers in various subject matter areas to the high school teachers.

A variety of enrichment classes were provided for the gifted students, including special sections of regular classes. Since an advanced student could be assigned to only one or two enrichment classes, the regular classroom teacher had to make plans for stimulating his more gifted students. Some planned study time for the class so they could work with smaller groups; some held group conferences with able students for the interchange of ideas; some gave the same assignment to the entire class, with more complex approaches to the general theme required of the more able students. Gifted students sometimes used the teacher's study hall for conferences. Teachers generally had only one enrichment class and four regular classes, many of them using the materials and methods of the one to enrich the activities of able students in the other four.

An evaluation of the high school program revealed that the

majority of teachers were in favor of special classes: 59 per cent favored them strongly, 26 per cent favored them somewhat, 7 per cent were undecided, 5 per cent disapproved somewhat and less than 2 per cent disapproved strongly.

RESEARCH PROGRAM

Research in conjunction with the program was done on the following problems: (1) identification and testing of talent, (2) attitudes of gifted students, (3) qualities of leaders, (4) achievement and adjustment of gifted pupils in elementary schools, (5) college follow-up studies, (6) creativity, (7) underachievement among high school students, (8) ability grouping in ninth-grade English and social studies classes.

DEMONSTRATION GUIDANCE PROJECT

The Demonstration Guidance Project at Manhattanville Junior High School 43, and the George Washington High School in New York City was begun in 1956.^{*} The purpose of the program was to identify, stimulate, and guide students of reasonably high ability but low socioeconomic background toward college education.

As a six-year program, it was designed to permit follow-up of seventh-grade pupils through graduation from high school.

THE PROJECT AT MANHATTANVILLE JUNIOR HIGH SCHOOL 43

The Manhattanville Junior High School had a population of approximately 1,400 in 1956, and served a community that had ethnic ratios of approximately 40 per cent Puerto Rican, 50 per cent Negro, and 10 per cent white and others. The school serves a culturally deprived community.

Pupils were selected for the program in the following way: In June, 1956 class sheets were prepared that included, when available, intelligence test scores, reading and arithmetic test results, and teachers' comments on each incoming pupil and pupils already in junior high. The project administered addi-

^{*} "Demonstration Guidance Project Junior High School 43 Manhattan and George Washington High School," *Third Annual Progress Report* (New York: Board of Education, 1958-59).

tional tests on a school-wide basis and obtained teacher estimates of each pupil's academic potential in the fall of 1956. The SRA Non-verbal Test of Intelligence, Stanford Reading and Arithmetic Tests, a personality test, and teachers ratings on a four-point scale were used. Each student was evaluated on an over-all basis of 10 points—2 points for above-average I.Q., 6 points for academic achievement no lower than one year below grade level, 2 points for positive teacher evaluation of academic potential. The "criteria" used in selecting pupils for the program were liberal so that anyone having possible academic potential would be included. In December, 1956, twenty-two experimental classes were organized. In the seventh grade there were eight classes having 249 pupils; in the eighth grade there were seven classes having 228 pupils; in the ninth grade there were seven classes having 240 pupils. Of the 717 pupils in the classes, 334 were boys and 383 were girls. The groups comprised about 50 per cent of the student body.

The program.—The program consisted of guidance, clinical service, remedial service, cultural enrichment, and parent education.

Group guidance formed the basis of the program from the very beginning. In group guidance classes, questionnaires "About Me and My Plans" and "Your Educational Plans" as well as the Mooney Problem Check List and the Brainard Occupational Preference Inventory were used. The social worker explained her services to the pupils, and the entire class visited colleges. Individual guidance was also a part of the program.

A psychologist and a social worker were assigned to the project to provide clinical services. They each served the school one day a week. Psychiatric service for diagnosis and consultation was also available.

Remedial services were furnished in speech, reading, and mathematics. Many of the students had poor speech patterns. It was anticipated that they would be handicapped not only when they were to appear before college and admissions officers for interviews but also in their work in college. Since admission to college was one of the goals, a program was initiated to improve their speech pattern. Special help in reading was given

as part of the regular English program by a teacher skilled in remedial techniques. Gains were made particularly in comprehension, but more important was the change in attitude, not only toward reading but toward school as a whole.

In mathematics, remedial instruction was given when an individual pupil encountered specific difficulties. This special help was available to all the students in any experimental class upon either the teacher's recommendation or personal request.

The cultural enrichment program was expanded each year of the project. Pupils saw 12 plays off and on Broadway, attended 15 operas, some at the Metropolitan Opera House; on occasion they went backstage and interviewed actors and actresses. They attended 8 concerts, 3 ballet performances, 2 films, 15 out-of-town football games, and went on 15 specially arranged trips, including a visit to the Brookhaven Atomic Energy Laboratory. Attendance at football games included a tour of the college campus.

In parental education, individual interviews were set up during the day between parents and the counselor. In the early stages of the project, these meetings were generally initiated by the counselor, but later, parents more often took the initiative.

Evaluation of the program.—In 1956 the median seventh-grade student in the Guidance Project, who was 1.4 years retarded in reading comprehension, was graduated from junior high school with a score three months above grade level. He showed a reading growth of 4.3 years in the 2.6 years that elapsed between the first and last tests.

In 1956 about 20 per cent of the group was at or above grade level in reading comprehension. In 1959 the total was 54 per cent. Between 1956 and 1959 the number of students two months or more above grade level rose from 28 to 78.

Records of older brothers and sisters of students in the project were studied and were found to have been 1.26 years below the grade level at the ninth grade. The difference between those in the project and their siblings was 1.56 years.

Evaluation of achievement in arithmetic indicated that in both arithmetic reasoning and in computation, approximately 1.8 years was gained in the two years of the study made at that time. The

median student, therefore, did not gain a year's achievement in a year's academic work, nor did he improve his rate of growth. In view of these disappointing results, an item analysis of the arithmetic problems that had been failed by the pupils was made and the results were given to the district mathematics co-ordinator for review and the problem was referred for further curriculum research.

Evaluation of the project revealed a reversal of the downward trend in I.Q. scores previously noted in the school. In 1955, when the group was in the sixth grade, the median I.Q. was 94.0; in 1959, when the group was in the ninth grade, the median I.Q. was 97.6, a gain of 3.6 points.

Attendance of the pupils in the project was above the city average and increased as the project progressed. An average of 30 pupils more were in attendance in the school when the project was conducted as compared with average attendance throughout the city.

An additional benefit was experienced by the school as a result of the program. A comparison of the number of court appearances of the pupils from the Junior High School 43, the students from six comparable junior high schools and from the city of New York as a whole showed that for the five-year period from 1954 to 1959 the rate of increase for Junior High School 43, was half that of the city and a third that of the other six junior high schools.

PROJECT AT GEORGE WASHINGTON HIGH SCHOOL

The first class of the demonstration guidance project to enter the high school came in September of 1957. On the basis of available figures, it is predicted that only 25 per cent of the project pupils will drop out. This can be compared with the expected 38 per cent dropout for the school as a whole. When some of the pupils demonstrated their inability to profit from college programs, they were permitted to change their course to commercial or "modified" subjects in which they could achieve some success. After having been transferred to the modified course of study, 32 of the 44 students who had been failing in their academic work passed all their subjects, and 9

passed all but one. The recommendation was made that, except under unusual cases, the academic program in high school should be limited to those who could show by the tenth year that they could profit from it.

Pupil programing.—The programing arrangement for the classes were as follows: Pupils were given a double period in English and were programed in language and mathematics in classes of ten to fifteen. Registers of classes in other subjects were kept well below the school average. At the end of the first two years of operation of the project, the teachers felt that much of the academic progress of the students could be traced directly to the ability grouping, the double period of English, and the small class enrolments.

Students who needed more help than could be afforded in their classes, and who showed some evidence of potential, were recommended by their subject teachers and counselors for after-school tutoring. Failing pupils were encouraged to go to summer school to make up their work. The results of tutoring and summer school were encouraging.

Guidance program.—A full-time guidance counselor was assigned to each of the two project classes. He saw students individually and conducted group guidance once a week. Every student in the project was interviewed at least twice each term and more than half the students were seen four or more times.

Clinical services.—The psychologist and social worker previously assigned to the project continued to work with the students who required special help. This service was important and successful in several individual cases. During the year the psychologist worked with 17 students and the social worker with 22 students. All of these young people had emotional problems stemming in most instances from broken homes, poverty, and other deprivations.

The cultural program was also continued. The group attended leading Broadway plays, Philharmonic concerts, the New York City Ballet, art exhibits, and visited college campuses.

Academic progress.—The report concludes that the scholastic accomplishment of the project students was far better than that of the previous classes of Junior High School 43.

Individual changes in I.Q.—The Verbal Series, Intermediate form B of the Pintner Test of General Ability had been given in 1956 to 105 pupils and was compared with the Advanced form B given in 1959 to the same group. Approximately 38 per cent of the students gained more than 10 points, 23 per cent of the students gained from 5 to 10 points, 29 per cent of the students had I.Q.'s within 5 points of the earlier results, 5 per cent of the pupils lost from 5 to 10 points and about 5 per cent lost more than 10 points.

CONCLUSIONS

Among the conclusions drawn from the Demonstration Guidance Project are the following: The Non-Verbal Test is an important instrument to be used to screen students who come from deprived backgrounds. Teachers' evaluations help supplement objective tests particularly in identifying students who did not do well in standardized tests. The counselor-pupil ratio of 1 to 275 was sufficient, but the services of a psychologist and social worker a day and a half each week were completely inadequate. The hardest task was to interest students in cultural experiences, but the more they had, the more they wanted, except for lectures. Interest came more easily when attendance was paid for them. Progress in reading skill can be greatly accelerated, but mathematics is more resistant to improvement. The trend toward progressively lower I.Q. scores on group intelligence tests can be reversed by programs which provide encouragement, enrichment, and motivation. Parents often seem hard to reach and indifferent, but they have not normally had the advantages their children are getting. Class attendance and behavior can be improved and can help stem the rise of juvenile delinquency.

EDUCATION OF THE GIFTED IN EVANSTON, ILLINOIS

In September, 1956, the Community Consolidated Schools in Evanston, Illinois, launched a research study to find the answer to the question of the best administrative provision for bringing enrichment to gifted children.⁴

⁴Vera V. Miller, "Education of the Gifted," *American School Board Journal*, September, 1959, pp. 23-26.

The subjects for the study were drawn from the third grade in 1955-56. The first screening was based on group test scores already recorded in the cumulative folder of the children. These tests included a reading test given in kindergarten and another in first grade, a third reading test in second grade, as well as a group intelligence test. Children scoring in the top 20 per cent, according to the Evanston norms, on any two tests were tested individually with the Wechsler Intelligence Scale for Children (WISC). Children who were suggested by the third-grade teachers as possible candidates were also tested individually. One hundred and six children with I.Q.'s between 120 and 146 on the WISC were chosen as subjects of the study. The average I.Q. of the group was 126.

The efficacy of the various administrative arrangements was tested according to the following plan: Two completely segregated classes and three partially segregated classes were established. This included about 50 children. Planned enrichment in the heterogeneous classroom for about 25 children was instituted in two schools. Eighteen gifted children who were accelerated because of early entry into kindergarten, and about 60 who served as controls to the study were placed in heterogeneous classes. The figures are not exact because of enrolment fluctuation from the beginning to the end of the project.

There was no significant difference in intelligence among the groups. The teachers were specifically instructed to provide horizontal rather than vertical enrichment. Thus, for example, the segregated groups had the opportunity to learn conversational Spanish. The partially segregated groups were taught conversational French.

EVALUATION OF THE FIRST YEAR OF THE PROGRAM

In the first year of the program the Gray-Votaw-Rogers Achievement Test was used to measure the academic progress of the children. The test had been administered near the end of the third grade and again at the end of the fourth grade. All of the groups were superior in achievement. The partially segregated group made more progress than any other. Their gains were not statistically significant, however. The only significant

difference in achievement among the groups occurred in the younger accelerated group whose achievement was lower than the control group.

In the first year the teachers rated the pupils before they entered the program at the end of the third grade and again at the end of the fourth grade. Teachers' ratings were high for all groups in both years, although they were, in general, somewhat lower in the fourth grade than they had been for the same pupils in the third grade. This result was interpreted to mean that fourth-grade teachers may have held higher expectations for the bright students than the third-grade teachers had.

The social relations of the gifted children were measured with sociograms. All gifted children were chosen by their peers significantly oftener than other children were, but there was no significant difference in the social relationships of the pupils in the various groups.

The Rogers Test of Personality Adjustment was administered to all fourth-grade children. The results indicate that the children in all the groups were better adjusted than average children and had fewer personality problems.

The Parent Rating Scale and Questionnaire showed that the majority of the children came from homes economically above average and that the level of education of the parents was high.

EVALUATION OF THE SECOND YEAR OF THE PROGRAM

During the second year of the study, in 1957-58, when the children were in the fifth grade, the following instruments were used to appraise their progress: (1) California Achievement Tests, at the beginning and the end of the school year, (2) teachers' ratings sociograms, and cumulative records, (3) tests of creativity in writing, and drama, (4) personality tests.

The groups did not differ significantly in their achievement. The teachers' rating scales gave mixed results. The control children were rated significantly higher on nine traits as compared with the first year, and teachers of segregated classes rated their children lower, on a large number of items. These results raised questions of the reliability of the teachers' ratings.

Results from the sociograms indicate that the social relationships of the bright youngsters continued to be good and that there were no significant differences among the various groups.

In measures of creative writing, the only significant difference between the various groups was in favor of the partially segregated over the segregated. In rating the material from the cumulative record and in music, art, and drama on the gifted children, no significant differences were found among the five groups.

In the personality assessment, the gifted groups were found to have a practical, serious approach to life; they were realistic, controlled, organized, and persistent.

CONCLUSION

There appear to be no great advantages to acceleration over complete segregation, partial segregation, classroom enrichment as measured by the achievement tests and other measures used in the Evanston study. This result is due in part to the lack of sufficiently high ceiling on the achievement tests that were used. It is also due in part to the policy of horizontal rather than vertical enrichment.

The researchers indicate that bright youngsters could spend approximately one day out of five exploring enrichment activities over and above the usual classroom program without lowering their achievement. They are willing to adapt to the classroom situation in which only average output is expected, but they welcome the chance to use their potential.

The study concludes that acceleration works very well, that the underaged achieve as well in the class to which they have been advanced as other bright pupils of the normal class age, and that they are significantly higher than other groups in educational quotient, indicating that they are using their potential to good advantage. The accelerants are rated as highly by teachers and are well liked by their classmates. Creativity, in writing and in drama, appears to have a fairly consistent relationship to intellectual ability, although there are some exceptions. Personality tests indicate that the children are very well adjusted in comparison to other children their age.

COLLEGE PROGRAMS

During the past decade the colleges have also become more interested in the gifted student. In fact, one of the two major areas of research on college students in recent years has to do with the extent to which able students go to college and with the conditions under which able students do well in college.

There are two general ways in which colleges attempt to help gifted students. One way is to improve the liaison with high schools, and the other way is to make curriculum adjustments for able students in the college.

LIAISON BETWEEN COLLEGE AND HIGH SCHOOL

Since able high school students are apt to find the ordinary high school curriculum inadequate to their abilities and interests, some colleges have assisted some high schools in working out schemes of acceleration which will allow the student either to enter college without waiting for high school graduation or to do college-level work while still in high school. Significant experiments have been made recently along both of these lines.

Early admission to college.—Twelve colleges and universities carried on an experiment between 1951 and 1958 with admission to college of able high school pupils who had not graduated from high school.^{*} During a four-year period, 1,350 able boys and girls entered the colleges as freshmen. They were studied carefully and their college records were compared with those of a similar group of able students who had graduated from high school and entered these colleges in the usual manner. The colleges were Chicago, Columbia, Fisk, Goucher, Lafayette, Louisville, Morehouse, Oberlin, Shimer, Utah, Wisconsin, and Yale.

The accelerated students were treated differently in the various colleges; one college set up a special curriculum for them and some had special dormitory arrangements. But most colleges treated them pretty much as they treated their regular students. Three types of evaluation of the experiment were conducted.

^{*}Fund for the Advancement of Education, *Bridging the Gap between School and College* (1953); *They Went to College Early* (New York: 1957).

First, the students in the experiment were compared on college grades, Graduate Record Examination scores, and extracurricular activities with groups of regular students of equal intellectual ability. The experimental group had better grades than the class average, and, in the majority of colleges, better than their comparison groups. In extracurricular activities the younger students had about the same amount of activity as the regular students.

Second essays were written in 1955 by experimental students and by comparison students. Subjects in the experimental group were asked to write about their experience as accelerated students; those in the comparison group were asked to give their opinions of acceleration. The experimental group gave an overwhelming vote of confidence to the accelerated procedure, citing as advantages the increased intellectual challenge and the avoidance of time wasted by repetition and slow pace in high school. However, they indicated that they had more problems of personal and social adjustment than the ordinary student. Boys did not have many dates, at first, though girls were not handicapped in this respect.

Third, a study of emotional and social adjustment of the experimental group was made by a team of three psychiatrists who were accustomed to working with normal young people. They concluded that the proportion of the scholars with emotional difficulties did not exceed that among college students in general and was below the general average rate in some of the colleges. They also concluded that some of the difficulties of the experimental group could have been avoided by more careful selection of the gifted and by counseling and guidance through the student health service. They also found that students from stable homes, urban areas, and families accustomed to college education were better risks than students from broken homes, rural areas, and families that were not accustomed to sending their children to college.

In general, this experiment indicated that early admission to college for gifted students is feasible, and several of the colleges in the experiment, as well as others, now admit gifted students without high school graduation. However, there has been no general trend toward earlier admission to college in recent years.

Apparently neither the parents of gifted children nor their secondary school teachers are much in favor of their entering college at the age of sixteen.

Admission to college with advanced standing.—An alternative form of acceleration for high school students is to permit them to take college-level courses while in high school and to secure college credit for these courses. To give this method a trial, "The School and College Study of Admission with Advanced Standing" was begun in 1952 by Brown, Bowdoin, Carleton, Haverford, Kenyon, Massachusetts Institute of Technology, Middlebury, Swarthmore, Wabash, Wesleyan, and Williams co-operating with twenty-two secondary schools. Committees made up of college and secondary school faculty members drew up syllabi for college-level courses to be taught to high school students in such subjects as English, American history, European history, physics, mathematics, and foreign languages. At the same time the College Entrance Examination Board prepared examinations to fit these syllabi and agreed to administer and to score these examinations. Students could take these examinations and ask to have their grades sent to the colleges they were to enter, requesting the college to give them advanced placement or college credit, or both.

Preparation for the examinations could be made through courses offered in high school, or through individual study with or without the aid of a high school teacher or a tutor.

This plan has proved rather popular and has spread to a large number of secondary schools and colleges. In 1959, in 562 schools, 5,862 students took advanced placement work, 8,265 examinations, and entered 391 colleges. In 1958, one-sixth of the entering freshmen at Williams received college credit for advanced placement courses.

Most students take only one or two college-level courses and then get some enrichment of their high school program together with greater latitude of choice of courses in college but no acceleration. However, some colleges find that a good many students are using the program for acceleration. Thus, Harvard had 54 students entering as first-year sophomores in 1958, by

means of credits earned by taking examinations for advanced standing.

Another form of liaison between high school and college involving an already large but growing number of students is work in a neighboring college done by pupils while they are still in high school. For example, 28 California junior colleges in 1958-59 enrolled 389 high school students for college courses in addition to their full high school programs.

HONORS PROGRAMS IN THE COLLEGES

As a means of enrichment for gifted students in college, some form of honors program is widespread and growing in popularity.

Before 1950 there were only a few honors programs in American colleges. These were limited to a few upper classmen who were encouraged to do quasi-independent work as part of their junior or senior program and to write an honors thesis under the guidance of an instructor. This had been going on for 25 or 30 years in a few colleges.

After 1950, there began a movement to make curriculum adjustments for able students by means of an expanded and variegated honors program. The term "honors" has taken on an amplified meaning—practically the same meaning as "program for superior students." One of the leaders in this field, Joseph W. Cohen, of the University of Colorado, has proposed the following fourteen-point program as a means by which the college can meet its responsibility to superior students.

1. Identify and select students of higher ability as early as possible. This involves far closer cooperation than has hitherto been the case with high schools and preparatory schools. The proper uses of predictive techniques, past records, entrance tests and interviews, and studies of aptitude, motivation and achievement are now being explored and much experience is being canvassed.

2. Start programs for these students immediately upon admission to the college or university and admit other superior students into these programs whenever they are later identified by their teachers.

3. Make such programs continuous and cumulative through all

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four years with Honors counseling especially organized and equally continuous.

4. Formulate such programs in terms *both* of all the college work for the degree *and* of the area of concentration, departmental specialization, pre-professional or professional training.

5. Make the programs varied and flexible by establishing special courses, ability sections, Honors seminars, colloquia and independent study. Advanced placement and acceleration will serve in a contributory role.

6. Make the Honors Program increasingly visible throughout the institution so that it will provide standards and models of excellence for all students and faculty, and contribute to the substitution of an "Honors outlook" for the "grade outlook."

7. Employ methods and materials appropriate to superior students. Experience has shown that this involves:

a. Bringing the abler students together in small groups or classes of from 5 to 20 students.

b. Using primary sources and original documents rather than textbooks where possible.

c. Less lecturing and pre-digesting by the faculty of content to be covered; approaching selectively the subject matter to be covered; discouraging passive note taking; encouraging student adventure with ideas in open discussion—the colloquium method with appropriate modification of this method in science and professional schools.

d. Supplementing the above with increased independent study, research and summer projects.

e. Continuous counseling, in the light of the individual student's development, by teaching personnel, not by full-time non-teaching counselors.

f. Giving terminal examinations to test the Honors results.

8. Select faculty qualified to give the best intellectual leadership to able students and fully identified with the aims of the program.

9. Reduce regular requirements where possible in order to give abler students greater freedom of choice among alternative facets of the Honors Program.

10. Build in devices of evaluation to test both the means used and the ends sought by an Honors Program.

11. Use good students wherever feasible as apprentices and research assistants to the best men on the faculty.

12. Employ Honors students for counseling, orientation and other academic advisory purposes in the general student body.

13. Establish where possible an Honors center with Honors library, lounge, reading rooms and other appropriate decor.

14. Assure that such programs will be permanent features of the curriculum and not dependent on temporary or spasmodic dedication of particular faculty men or administrators—in other words, institutionalize such programs, budget them and guide them in building thereby a tradition of excellence.*

If these 14 points are made the basis for a program, the result will be special courses or classes at all levels of the college as well as horizontal enrichment and vertical enrichment, and these are all found in college programs today. In fact, there was even an honors program in Liberal Arts for *graduate students* at Emory University, reported in 1958.

Upper-class honors.—For superior college juniors and seniors there has been a major extension of honors programs, consisting of small classes conducted in seminar style, and individual work done on a tutorial basis. This has spread to a large number of colleges, and it has been expanded within colleges, like Williams, that have had it for a long time. Thus, at Williams, which commenced honors in the mid-twenties, the proportion of students taking honors reached 40 per cent in 1958, and this type of work was becoming the expected thing among students who made any claim to devotion to scholarship.

Honors for freshmen and sophomores.—A relatively new emphasis in the 1950's has been honors work for lowerclassmen. This has come about mainly, though not solely, in large universities as a means of giving special attention to able freshmen. Beloit, Stetson, and Arizona State College at Flagstaff are small colleges with honors programs for freshmen and sophomores. The University of Michigan had 200 freshmen in the honors program in 1958. The University of North Carolina had 50 freshmen in such a program in 1959. The University of Oregon established a four-year Honors College in 1960. Michigan State

* Joseph W. Cohen, "The ICSS 1959," *Superior Student* (Newsletter of the Inter-University Committee on the Superior Student), II (October, 1959), 4-5.

University started an Honors College in 1957, with 300 sophomores. Stanford has an honors program in Humanities, commencing with the latter part of the freshman year. In 1959, Harvard began its Freshman Seminar Program.

Vertical enrichment by honors programs.—The traditional honors program was one which encouraged greater depth of study in the student's area of specialization. This continues to be true of most programs for juniors and seniors, though occasionally one finds a seminar-type course for juniors or seniors that aims to broaden their experience.

Horizontal enrichment by honors programs.—The new honors programs, especially those for freshmen and sophomores, sometimes aim at breadth of enrichment. This is especially likely to be found in professional schools, such as engineering, agriculture, and home economics. Thus, Yale offered a special program in Humanities for superior engineering college freshmen in 1957. The University of Washington in 1959 offered an honors course for juniors and seniors in business administration which was aimed at broadening the student. Similar courses may be given in liberal arts colleges. For instance, at the University of Michigan in 1958 an interdisciplinary course in natural science was being given to able students who were not specializing in science.

ISSUES WITH REFERENCE TO HONORS COURSES

The following statement on major issues with respect to college honors courses was made by Professor R. C. Angell at a Conference of the Inter-University Committee on the Superior Student, in the spring of 1960. Professor Angell is director of the Faculty Honors Council of the University of Michigan. He dealt with five issues which he thought were of major importance in college honors programs.

Should Honors Begin with Freshmen? The first of the five issues I should like to discuss is given by the question: Who should participate in Honors work? The answer to this question necessitates answers to three sub-questions, the first of which is: At what point in the academic career should an Honors program start? When we adopted our College Honors Program at Michigan in 1957, we de-

cided to take in students as entering freshmen. Our experience of the last three years has made me appreciate the arguments against our policy as well as those supporting it.

One of the strongest reasons for starting with freshmen is that you avoid the possibility that your brightest students will find college work boring. Actually, it was the criticism from superior upper-classmen that the first two-years' work at Michigan was not challenging enough that, more than anything else, led to the establishment of the College Honors Program. There was evidence that such students sometimes turned to enterprises like the *Michigan Daily* to find intellectual adventure.

The main counter-argument is that one cannot do an accurate enough job of selection among entering freshmen to make the system work well. A good many are chosen who will not perform up to expectations, and a good many are passed by who will excel. It is true that one can make much better predictions about academic success after the students have been through a semester or two quarters. Furthermore, it would be almost impossible in a large institution to make the selection of a whole class during the academic year. There is just too much red tape to getting the marks, deciding who should be invited to join the program and registering them in Honors classes. This means that in practice one would have to wait until the sophomore year. And even then the selection would not be perfect, for there are many late bloomers who do not show their ability until they are half way through college.

The truth of the matter is that a sifting process goes on throughout the four years, with some of the seemingly potential champions falling by the wayside and a good many originally unpromising youngsters coming to the fore. The longer the selection is delayed, the better will be the batting average in Honors degrees. But, also, the more frustration, dissatisfaction and lost achievement there will be among the large number who could have been selected earlier and would have performed well until graduation.

An objection that might be raised against early selection is that *having to drop the unsuccessful is too damaging to their egos*. We have seen little evidence of this at Ann Arbor. The unsuccessful students realize that they are over their heads and are very sensible about returning to normal university status.

Although we have not yet been through four years of our program and so cannot see the full cycle, I think we will continue to take entering freshmen. About one in six fails to make a B average

in his freshman year, and a very few more drop out as sophomores. But that gives us a large majority of our original class who are finding that they can take advantage of the opportunities offered them and can go on to work for an Honors degree in a department or field of concentration. A side benefit that under-class Honors work produces is satisfaction on the part of professors. At the end of the past semester a political scientist and a mathematician sought me out to tell me how much they enjoyed teaching Honors freshmen, and a philosophy professor spoke in the same vein about a sophomore Honors class in logic.

Should Late Bloomers Be Added? I have already implicitly answered the second sub-question under the first issue, to-wit: whether new students should be added to the program as they show the ability to do superior academic work. I believe that they should. Any disruption that is thus caused is more than offset by the value to the newly chosen students.

We do not yet know how much handicapped those who enter the program as juniors are in competition with those who have been Honors students as underclassmen. There is already some evidence that the latter group take more easily to upperclass Honors work. If this proves to be true, it will simply mean that we will have to tighten our standards of admission at the junior level.

How Are Honors Students Identified? The third sub-question is: How does one identify students of Honors caliber? In my opinion one has to rely mainly on academic averages and test batteries, weighted about equally. With entering freshmen I have come to the conclusion that no student from a public school, no matter what his test scores, should be admitted at entrance unless he was in the upper five percent of his class. (This can be relaxed to ten percent for good, private schools.) Conversely, even if the high school record were perfect, I would not admit him unless he showed on tests the equivalent of a College Board score of 630. The great majority of freshmen whom we took last fall averaged above 650 and were in the upper two percent of their high school classes.

Our experience suggests that recommendations of high school principals are not very helpful except negatively. Principals and counselors naturally speak very highly of the upper five percent of a class, and yet this is too large a group for College Honors. However, when they do not recommend highly a seemingly very good student, be careful. It often means there are emotional instabilities present that may handicap him in college. More helpful are indica-

tions of intellectual curiosity and creativity that appear in what the student reveals in his free answers on admission blank. Those who have done field studies in biology, have built electronic equipment, have tried to write novels or epic poems or who want to study Chinese are likely to be excellent prospects.

Incidentally, research is going on at various places, including Michigan with a view to perfecting tests of creativity or critical thinking. If this research succeeds, we will have an added tool for selection, and perhaps an added criterion for retention.

Enrichment or Acceleration? The second issue I would like to pose is whether the emphasis should be on enrichment or acceleration? Notice I have said emphasis, because this is not really an either-or question. Although we put the emphasis on enrichment at Michigan, we cannot prevent some acceleration. In the first place, a number of our students have qualified for credit under the Advanced Placement Program through courses taken in high school. Second, mathematics seems more suited to acceleration than enrichment—at least so our mathematicians believe. Third, our summer reading program allows Honors students to take a course each year out of residence. And fourth, it is difficult to discourage many of them from taking extra courses during the school year. The upshot is that four of our first class are graduating in three years, and many more will graduate in three and one half years. This sort of irresistible acceleration is creating many problems for institutions that have thought of four years of college experience as sacrosanct.

There are those, however,—some of them in my own university—who think we should not allow acceleration grudgingly, but should welcome it. They argue that some students know more when they enter college than others do when they graduate and conclude that the able ones should get ahead into graduate or professional work as soon as possible. The rejoinder to this of most members of our Honors Council is that acceleration leads to earlier specialization and that this is not what our country needs from its brightest students. They point to the fact that we have rarely produced students having the breadth and depth of an Oxford education and say that Honors work in college gives an opportunity to approach this standard. Hence they want the courses for Honors students to be more thorough than regular courses. Instead of merely learning the formula, the students should see how it is derived. Instead of learning the generalizations in a textbook in sociology, they should delve into the monographs that produced the generalizations. Instead of

reading three Elizabethan authors in a semester, they should read five. Some feel they should have greater mastery of tools, too. It has been suggested in our Council, for instance, that we should require of Honors students proficiency in two foreign languages instead of one.

So far as I am concerned, I am persuaded that for our situation at Ann Arbor, the emphasis should be on enrichment. In technical schools it may be better to give priority to acceleration. At least the issue is an important one that should be faced by all those considering Honors programs.

What Is the Relation between Departmental and General Programs? A third issue, and perhaps the most difficult of all to resolve, is what should be the relation between the departments and a college-wide Honors program. When only upper-class Honors work is undertaken, the usual policy has been to let each department run its own show, with only a minimum of supervision from a college committee on Honors. Often there has been no insistence that all departments offer Honors degrees, but only those that wished to. But when under-class Honors work is undertaken as well, there has to be a different policy, if for no other reason than that someone has to take responsibility for the under-class Honors students, many of whom will not yet know what their department of concentration is going to be. There seem to be three possible policies. One is to transfer responsibility for all Honors work to a college-wide body of some kind; the second is to put the under-class Honors work under such a body, but to leave the upper-class Honors work to departments; and the third is to put general responsibility in the hands of an Honors Council, but with much authority delegated to departments at the upper-class level.

The advantage of the first alternative is clear. It is administratively simple—probably deceptively so. It makes possible clear policies on curricula and degrees. The Honors Council may insist on the curtailment of excessive specialization and see to it that those who earn Honors degrees have true breadth, that they qualify for what is often termed General Honors. Perhaps the most serious defect in this solution to the problem is that you cannot get many college faculties to accept it. The departmental tradition is too strong in most of our institutions. The belief in the importance for the best students of extensive knowledge in a single discipline is so widespread that the departments would rarely relinquish control. And

I am not arguing that they should. There is certainly here a real dilemma, either horn of which has its disadvantages.

A simple way out, but I am not sure an effective one, is to split the authority at the mid-point of the student's college career, giving an Honors Council control over the first two years, and the departments over the last two. This can probably be sold to most faculties, but I think there are serious drawbacks. For one thing, there is likely to be a lack of coordination between the two halves of the program. If some departments decide not to offer Honors degrees, there will be disappointment among students who have come up through the under-class Honors program when they find no Honors opportunities in their field of concentration. But even when they find they can go on to an Honors degree, the students who have experienced the underclass program may well be unhappy about the lack of opportunities for Honors work outside their fields of concentration. If the departments are in complete charge in the last two years they are unlikely to worry about giving Honors opportunities to any but their own concentrating students.

It is such considerations as these that make it seem desirable for an Honors Council and the departments to share in some way the responsibility at the upper-class level. At Colorado this has been worked out by having two sorts of degrees, Departmental Honors and General Honors, administered somewhat independently, though a particular student may be a candidate for both. Even if a student decides not to take General Honors, he still has available to him greater breadth than a departmental Honors concentration would give him in schools having no General Honors program.

We at Michigan are trying another scheme, though it is too soon to say how successful it will be. Our Honors Council has general charge of the whole four year program, but it has delegated much of the responsibility for the upper-class program to the departments. The Council sets general standards for admission to candidacy for Honors degrees, exercises some supervision over the sorts of opportunities offered by departments and sets the general standards for awarding degrees. Moreover, the Honors Council is stimulating the development of Honors opportunities outside the field of a student's concentration. These are of two kinds: departments are being urged to nominate two or three courses that are particularly suitable for able non-concentrates in the hope that these courses will gradually take on an Honors character; and a small number of special inter-

disciplinary courses at the upper-class level are being fostered by the Honors Council. It is our hope that we can counsel our students to elect these courses in sufficient numbers to make an Honors degree represent breadth throughout the four years as well as the specialized depth obtained through Honors concentration.

How Can Excellence Be Cultivated within Large-Scale Bureaucracy? My fourth issue is perhaps not properly so called. It is not something on which men take sides. Rather it is a problem. It is posed by the question: How do we cultivate excellence in the midst of large-scale bureaucracy? This is a problem to which I have no easy answers, and I doubt that there are any. In institutions of thousands of students even Honors work can hardly duplicate the proverbial situation of the log, the student and Mark Hopkins.

What are some of the bureaucratic obstacles? One of the principal ones is that we are caught in the credit-hour-and-grade system. So long as most of our best students go on to professional and graduate schools, we cannot hope to break away. These schools will demand an accounting from the undergraduate college, and it is unfair to the student not to provide it. The possibility that this accounting might take a more qualitative form seems, at the moment, remote.

More discouraging, even if we were not under pressure from professional and graduate schools, we would still have to rely on marks as criteria for success in our Honors work. Most of us recognize that not all A's represent imaginative and critical scholarship and that many a student of true originality performs unevenly in terms of grades. We would like to replace grades with criteria more suitable to our purpose. In small schools this can be done. All the professors who have had a particular student can confer and reach a consensus on his Honors potential. In large institutions that is simply impossible, and to do it through recommendation forms would just add to the red tape. There is hope that tests of imagination, creativity or critical thinking will soon come to aid us in the screening process, but for the moment we are stuck with marks.

These obstacles, serious though they are, do not, however, prevent the attainment of excellence in education. A clever and imaginative faculty can accomplish wonders even with a huge, bureaucratic system which rates students by course credits and letter grades.

Implicit in all my discussion has been the belief that for much of their work Honors students need to be segregated in separate classes. It is unfair to overworked faculty members to ask them to give special attention to Honors students who are mixed with other students in

regular classes. Occasionally the teachers will be willing to do this, but a whole Honors program cannot be based on this arrangement. Nor is it good enough, I think, to have Honors work merely supplemental to a regular student course load in the form of special interdisciplinary colloquia elected as extras. Such colloquia are fine educational experiences, but there should be Honors level work in courses in the usual disciplines too.

More important than anything else is good teaching. For the superior students this does not often mean listening to lectures, no matter how learned and polished. Superior students profit much more from the interchange of a well led discussion, from an apprentice relationship to a professor in the laboratory or from the preparation of papers which can be discussed in tutorial conferences. These forms of education are more costly, but when their potential is realized they are well worth the cost.

The interdisciplinary course seems particularly appropriate for Honors students. The argument that such courses give only a confused smattering to the learner is simply not true in their case. They can go deep enough to see how disciplines are related to each other in theory and in practice. And they enjoy contemplating the wider horizons of thought thus opened up.

Departments and fields of concentration will want to organize their work for the Honors degree in their own ways. Some will rely heavily on special pro-seminars, others on research projects under faculty supervision, still others on tutorial work and comprehensive examinations. It seems doubtful to me that a rigid pattern should be imposed by an Honors Council.

A final protection against deadly bureaucratic influences is a good counseling system in which relatively few Honors students are assigned each counselor. At this point there may have to be some spirit of self-sacrifice in the faculty, some willingness to do this job competently because of its supreme importance. This spirit may show itself more often if the counselors are also members of the Honors Council where they can have a policy-making role. Thus they feel that they are an integral part of the whole Honors effort.

Should Honors Students Have Special Privileges? The final issue that seems important to me is whether or not Honors students should receive privileges outside the classroom not accorded other students. Such privileges run from those that are academic, like special places to study; through those that are administrative, like permission to register first for courses; to those that are clearly non-

academic, like exemption from dormitory rules about hours and the like.

We have found at Michigan a sharp split on this issue both in the faculty and among Honors students. (We do not know the view of the non-Honors students.) A majority of the members of our Honors Council feel that privileges should be limited to those closely connected with academic matters. They think an Honors study room is unobjectionable, and they go along with special evening meetings at which members of the faculty discuss their research. They might even think it all right for Honors students to register early and thus get their pick of the non-Honors courses they are going to take (though I am not sure of this). An Honors lounge is just within the margin of acceptability. They see that it might conduce to intellectual interchange, but they are wary of creating jealousies in the remainder of the student body and of developing intellectual snobbishness in the Honors students.

Privileges which are further from the academic they tend to reject as extraneous. Thus they laughed some students down when they suggested late permission as something which would stimulate scholarly emulation in other students, and they have not been in favor of separate housing. They argue that we need to diffuse the influence of Honors students throughout the student body, though I suspect this is a rationalization and that the real reason is an unwillingness to risk a split in the student body.

These seem to be the views of the majority in the Council, but there is a minority with another position. Its members are in favor of separate housing, because they believe it would serve to maintain the intellectual atmosphere of the Honors classes which now becomes dissipated in the mediocrity of dormitory and fraternity and sorority life. They are less concerned with the jealousies of the non-Honors students and are willing to risk some intellectual snobbery, if as a result a true intellectual elite appears.

Much the same split is to be found among the Honors students and with much the same reasoning on both sides. Like others of the five issues, this one will be viewed differently at different institutions because of variations in size of the student body, campus traditions, faculty outlook and many other factors. It is, perhaps, not immediately as important as the others, but in the long run to adopt a policy on it that will be locally most effective may be crucial for the success of an Honors program.⁷

⁷ Robert C. Angell, "Issues in Honors," *Superior Student*, III (May-June, 1960), 18-24.

QUESTIONS FOR STUDY AND DISCUSSION

1. What is the significance of the Demonstration Guidance Project in New York City?
2. What definition of giftedness was used in the Portland, Oregon, Program for Students of Exceptional Endowment? How does this compare with that used in Evanston and the New York City Program?
3. How does one's definition help determine the nature of the program?
4. What are the strengths and weaknesses of the Portland Project? Of Evanston? Of Manhattanville Junior High School 43?
5. Weigh the relative merits of programs of early admissions to college and programs of admission to college with advanced standing.
6. What are the characteristics of a good college program for superior students?
7. To what extent are the issues in college honors programs the same as issues in the education of the gifted at the high school and elementary levels?
8. How do you interpret the rapid increase in the number of programs in the 1950's?

Motivation and Guidance of the Gifted

Educators know a good deal about the identification of gifted youth and about the enrichment of their experience. But equal in importance to these two elements is motivation in the development of a gifted child.

Motivation consists of purposes, ambitions, drives, and values. It is what enables a person of potential ability to take advantage of education, to develop and use his talents. Since motivation is something inside a person, the educator cannot manipulate it—decrease, increase, or change it—in the same way that he handles other aspects of the educational process; nevertheless, he can influence motivation.

THE IMPORTANCE OF MOTIVATION FOR COLLEGE

As of 1960 about 75 per cent of the boys and 60 per cent of the girls from the most intelligent quarter of youth entered college. Table 6 shows the relationship between I.Q. and entrance to college. About 50 per cent of the ablest quarter of boys graduate from college, and the proportion of the ablest quarter of girls who graduate is considerably smaller.

In the River City Study a cohort of boys and girls were studied from the sixth grade until some of them went to college. There were 53 boys in the top quartile of intellectual ability;

TABLE 6
INTELLECTUAL ABILITY AND COLLEGE ENTRANCE, 1960

QUANTILE FOR SCHOLASTIC APTITUDE	PERCENTAGES*			
	Enter College Male	Enter College Female	Do Not Enter College Male	Do Not Enter College Female
I (High)	19	14	6	11
II	15	9	10	16
III	4	3	21	22
IV	2	1	23	24

* The sum of the percentages for males or females entering and not entering college is 25 for each quartile. Thus, 19 per cent of males are in the top quartile, and entered college; 6 per cent are in the top quartile, and did not enter college. This table is based on three separate studies of college attendance in relation to intelligence.

34 of them went to college. The 19 able boys who did not go to college came mainly from working-class homes, had average or below average school grades, and had a lower achievement drive and lower personality adjustment scores than those who went to college. Five of them did not graduate from high school. Why do these able boys not go to college?

A similar question has to do with the high school achievement of able boys and girls. Why do some boys and girls with high intellectual ability do very well in school while others with equal ability do only average or even poor work?

The socioeconomic factor has been explored by Mulligan at Indiana University, where he compared student men who had veterans' educational benefits with men who did not have such financial aid. If money were a major factor, he should have found a much higher proportion of men in the veteran group whose fathers were manual workers. He found only a slightly higher proportion of sons of farmers and manual workers among the veteran students as compared with the non-veterans. Sons of skilled workers were more likely to take advantage of veterans' educational benefits than sons of semiskilled or unskilled workers. Mulligan concluded: "The farming, semi-skilled, and unskilled groups did not or were unable to take advantage of the G. I. Bill of Rights in proportion to their numbers in the State of Indiana. On the basis of the above parochial study it may be tentatively hypothesized that, in general, the absence of talented students from the white collar and skilled groups in institutions of higher learning is due, on the whole, to economic factors

The more successful group had an average I.Q. of 155 as children in 1922, while the less successful had an average of 150. However, there were considerable differences in other respects between the two groups. Ninety per cent of the more successful had been graduated from college, compared with 37 per cent of the less successful. There were important differences in the educational and occupational statuses of the fathers of these men, which presumably had different motivational effects. Fifty per cent of the fathers of the more successful group were college graduates, compared with 16 per cent of the fathers of the less successful. In occupation, 38 per cent of the fathers of the more successful were professional men, compared with 19 per cent of the fathers of the less successful.

Terman concludes, "Where all are so intelligent, it follows necessarily that differences in success must be due largely to non-intellectual factors," and, "Everything considered, there is nothing in which the [more successful and less successful] groups present a greater contrast than in drive to achieve and in all-round social adjustment. . . . At any rate, we have seen that intellect and achievement are far from perfectly correlated."⁴

Within the 1 or 2 per cent of the population highest in intellectual ability, it appears that success in life and contributions to society depend more on motivational factors than on variations in intelligence. This conclusion is borne out by Anne Roe's studies of distinguished American scientists.⁵ She found several of these fifty-nine outstanding men to be only moderately above average in intelligence. Above an I.Q. of 140, intelligence is a poor predictor of performance.

These considerations force one to the conclusion that non-intellectual factors, among them chiefly motivational factors, have the greatest importance in the development of high-ability youth. Consequently, it should be useful to analyze the phenomenon of motivation and to consider ways of improving the motivation of gifted children.

⁴ *Ibid.*, pp. 324, 352.

⁵ "A Psychological Study of Eminent Psychologists and Anthropologists, and a Comparison with Biological and Physical Scientists," *Psychological Monographs*, Vol. LXVIII, No. 2 (1953).

FACTORS IN EDUCATIONAL MOTIVATION

Motivation or incentive to do well in school depends on four major factors.

Need for achievement.—A basic, unconscious need for achievement exists in varying degree among all people. When it is exhibited, it takes the form of wanting to do one's best at anything or almost anything one tries. When intense, it causes a generally high aspiration level. Methods of measuring this need (called *n-achievement*), which have been worked out by McClelland,⁶ call for a Thematic Apperception Test technique to discover unconscious needs. Presumably the need for achievement arises from experience in the family. McClelland reports evidence that boys who show this need to a high degree have had unusually intense self-reliance training from their mothers.⁷ The mothers have systematically trained their sons to assert initiative and to solve problems by themselves, while at the same time they have supplied an emotional environment that assures the child of security.

Stivers⁸ found that boys of high ability who were well-motivated for college had a higher need for achievement than equally able boys who were not motivated for college. Pierce and Bowman⁹ found a tendency for able boys who achieved well in high school to have a higher need for achievement than others who did not achieve so well in high school.

Identification with persons who have gone to college.—Boys and girls form a deep unconscious identification with certain adults and strive to be like them. Usually a youth identifies strongly with the parent of his own sex, but he also identifies with the parent of the opposite sex, and perhaps with other adult relatives, as well as with attractive young adults in the community, including teachers and club leaders.

⁶David C. McClelland, J. Atkinson, R. Clark and E. Lowell, *The Achievement Motive* (New York: Appleton-Century-Crofts, 1953).

⁷David C. McClelland, A. L. Baldwin, U. Bronfenbrenner and F. L. Strodtbeck, *Talent and Society* (Princeton, N.J.: D. Van Nostrand Co., Inc., 1958).

⁸Eugene H. Stivers, "Motivation for College in High School Boys," *School Review*, LXVI (1958), 341-50.

⁹James V. Pierce and Paul H. Bowman, "Motivation Patterns of Superior High School Students," *The Gifted Student* "Cooperative Research Monograph" No. 2 (Washington D.C.: U.S. Office of Education, 1960), pp. 33-66.

When high school students are asked what adults have been most influential in their lives, those who are most desirous of going to college are found to have more parents or relatives or teachers or other "significant persons" who have gone to college or have urged them to go to college.

Social pressure.—In every person's social environment there are a number of forces which push him toward or away from doing his best in school. They may come through age-mates, teachers, parents, or neighbors. These forces may be measured by asking a student what agencies have set educational achievement before him as a desirable goal—family, school teachers, age-mates, community leaders, books, and the like. The social pressure is estimated on the basis of the number of these influences which are favorable to good school achievement, how intensively and how frequently they operate on him. Stivers found that those who were well motivated for college had a significantly greater set of social pressures pushing them toward college. Pierce found that able high school students who were doing well in school had more social pressure for school achievement than equally able students who were not achieving so well in school.

Often a well-liked teacher exerts a direct pressure on able students to do well in school and to go to college and at the same time is an object of identification for them. This is illustrated in the following account of the motivation for college of able students, given by Wolfe.

Walter Bingham [the psychologist] once told me that he approached the end of high school with no thought of entering college. One day one of his teachers took him aside and planted the idea that led him to enroll at Kansas University the following fall. I wonder how often a similar scene has occurred in the early lives of men and women who later entered the professional or learned fields. George Beadle, who was awarded the 1958 Nobel Prize in Physiology and Medicine, tells an almost identical story: a Nebraska farm boyhood, a father uninterested in higher education, and an inspiring teacher who urged the future Nobel laureate to enter the University of Nebraska. There must be many other eminent men and women who could tell similar stories: bright, industrious students with

In contrast to this, Coleman points out that interscholastic athletic competition generates a good deal of mutual support and individual effort. This is because the intergroup competition creates strong group goals, and individual competition contributes to these group goals and to group solidarity.

Coleman's suggestion is that the high school find ways to involve the group in scholastic or interscholastic competition of an academic nature and reap the same kind of benefits for academic success that the athlete has for his athletic prowess. He cautiously suggests interscholastic competition in mathematics, science fairs, and writing contests, as a way of increasing the status of high achievers in the adolescent society.

Intrinsic pleasure.—In some people there is a deep desire to carry on a certain kind of activity for the joy it gives. A person with this kind of motivation will work at the development of his talent without any thought of reward or approval from outside himself. This is found in people who like to paint, to make music, to dance, to read, or to tinker with a motorcycle. Anne Roe found this kind of motivation in a number of the outstanding experimental physicists whom she studied. They had spent much of their childhood playing with erector sets, radios, and other sorts of equipment that permit manipulation and construction. A more general form of this type of motivation is the sheer love of research in the scientists whom Anne Roe studied. Many reported that their decision to go into a scientific vocation came after they discovered the possibility of finding things out for themselves.

Once it was fully understood that personal research was possible, once some research had actually been accomplished, there was never any question. This was it. The educational implications are obvious enough. There has been no question since. From then on, absorption in the vocation was so complete as seriously to limit all other activity. . . . Although a few of them have cut down somewhat on their hours of work as they have grown older, it is still the common pattern for them to work nights, Sundays, holidays, as they always have. Most of them are happiest when they are working—some only when they are working. In all these instances,

other aspects—economic return, social and professional status—are of secondary importance.¹²

SEX DIFFERENCES IN MOTIVATION

It is common knowledge that girls do better than boys in school work, especially in elementary grades but also in high school and college. This is generally explained by the greater docility and conformity of girls than boys. In terms of the theory of motivation used in this chapter, girls are more susceptible to social pressure than boys.

This probably explains why more girls graduate from high school than boys—by a ratio of about 5:4. However, more boys enter college than girls. At this point in educational progress some new factor must enter to reduce the motivation of girls for education in comparison with that of boys.

The difference between boys and girls in motivation for college is probably due to the fact that the forces acting within and upon an able girl at the time of her graduation from high school push her in two different directions—on the one hand toward college and a career and on the other hand toward marriage and childrearing.

Girls with superior intellectual or artistic ability are likely to feel a good deal of conflict at this point, and to be uncertain about their next steps after high school graduation. Thus Stivers found that his prediction of college-going for girls was much less accurate than his prediction for boys. From his interviews with girls in the top quartile of I.Q. he found 38 whom he pronounced "well-motivated" for college while 32 boys were placed in the "well-motivated" category. Twenty-seven of the 32 boys actually entered college immediately after graduating from high school, but only 26 out of 38 girls did so. Of the 12 supposedly "well-motivated" girls who did not enter college, 6 were married by the end of the year following their graduation from high school.

Stivers¹³ found that able girls who were well-motivated for

¹² *Ibid.*, p. 49.

¹³ Eugene H. Stivers, "Motivation for College in High School Girls," *School Review*, LXVII (1959), 320-34.

college did not have higher scores in need for achievement than able girls who were not well-motivated for college. Pierce and Bowman¹⁴ found that able girls who got high marks in high school did not have higher scores in need for achievement than equally able girls with only average high school marks.

CASES OF EDUCATIONAL MOTIVATION

The following cases illustrate the interplay of the elements entering into educational motivation, and the differences between the sexes in this respect.

Ralph, an upper-lower-class boy with a high n-achievement score, planned to "attend the University and study to be a musician and a music teacher." In elementary school he had little competition and did well with scarcely any effort. His divorced mother had high hopes for him; both she and his older brother were proud of Ralph's success. In high school, apart from some difficulty in geometry, he continued to do well, especially in music. His mother and brother occasionally suggested college to him, and several of his best friends planned to go, but his greatest sources of encouragement were his music teachers and his own accomplishments in music.

I once wanted to be a farmer. Father was one, and also a couple of uncles. But when we moved into town my grandfather, a musician, prophesied that I'd be one too. My mother also plays and sings a lot. I didn't get interested, though, until the seventh grade, when I started my private music lessons. My present teacher especially has had a tremendous effect on me. With him, I built up my interest in music, and it's never dropped down. He has talked to me many times about going into music, and he told me that I'd have to choose between professional music and teaching. He built me up, maybe too much. After all, I'm no child prodigy; neither am I an idiot. To sum up, my teachers have influenced me to become as good as they are. Dick [his best friend, who is also a good student and a musician] is an influence because whatever is good for him is good for me. And my ability to play and strive to perfect music and my understanding of music is an influence on me.

¹⁴ "Motivation Patterns of Superior High School Students," *The Gifted Student*, pp. 33-66.

On the other hand, Tom, an upper-middle-class boy with a below-average n-achievement score, plans "to help Dad on the farm for a while, probably, then get a job in town. . . . I'm not sure what kind. Then I'll try for something better and advance as much as I can." Tom's elementary school years were spent in a rural school, where he did good work. In high school he did fairly well, though his teachers thought that he should do better. "I usually don't do as well in English as in other subjects," he said. His mother used to talk about college but has not mentioned the subject for several years. No other adult ever suggested that he attend college, and none of his close friends was going.

We've lived on a farm since I was five, so I got kind of interested in farming. And Barry (Tom's best friend) belonged to the Future Farmers last year and told me about it, so I got interested in it. But when I first came to high school I took industrial arts, and down in electric shop I kind of got interested in that. So I joined the 4-H Club and went to electricity training school. My Dad thinks that I should get a job in town after high school; I don't know exactly what kind. Mother thinks so too; maybe some kind of carpentry work, because my father does a lot of that.

For girls, a high n-achievement score is just as likely to be associated with marriage as a goal, or a career without college, as it is with college. The following examples illustrate this fact.

Susan, a blonde, lower-middle-class girl with an extremely high n-achievement score, planned to get a secretarial job after graduation from high school. "I will work through the summer until around November. Then I plan to get married," she told the interviewer. During her earliest years in elementary school, she received only above-average marks, although some of her teachers felt that she could get top marks in all subjects if she tried. Until she entered junior high school, however, no one set high standards for her. "In the seventh grade I started to run around with Judy. She liked to get good grades, and she was jealous of mine. I didn't care at first, but in the end I tried to beat her, and I did."

Through grade school and into high school, her parents' attitude towards her marks did not change a great deal. "They're

like me. They want me to get A's and B's, but if I get a C it doesn't bother them much."

Other personal influences in her life did change, though. In high school, her best friend made only average marks. Of the boy to whom she became engaged she said with a laugh, "Well, he gets average and sometimes maybe a little lower marks. He doesn't hate school or anything, but he enjoys himself while he's here." During this period, Susan was also influenced by her sister, who was taking a correspondence course in art but planned an early marriage.

Of her own plans, Susan explained: "I used to want to be an airline hostess, but no more. It's too dangerous, and I want to live. Now I want to be a secretary. Mother was a secretary for a lawyer, and the work sounds interesting to me. I like courts. I *do* know for sure that I will be married in November of the year I graduate. Whether I continue to work after that will depend on many things."

Nona, a tall, attractive, brunette, upper-lower-class girl with an extremely high n-achievement score, planned to "get a secretarial job here in the city. The money I earn is going to be put in the bank for a trip to Hollywood or New York, where I'll try my luck at acting," she told the interviewer.

When she was a child, mixed standards were set for her school work. Her parents expected her to do well but said very little about the matter. Her oldest sister was a good student, but the next older sister was not and finally quit school before she finished. Most of Nona's friends got average marks, and she remembers only one teacher who encouraged her. In those early years, no one influenced her to go to college. When she was about eleven years old, her life goals began to take shape. "Near the end of grade school I don't know what happened, but mother let me go places more, and I went to the show a lot. My hobby is collecting pictures of movie stars. I don't know what impressed me, but I guess it was seeing other people acting on the screen. When I saw them acting, I liked it. And I thought I could do it, since I've been in plays."

After she entered high school, her parents were more vocal about how well she should do. "My father, especially, is always

telling me he wants me to finish school, and he wants to make sure I do. When I bring cards home and there's something I've fallen down in, he usually gets kind of mad and tells me to work harder at it because he knows that I can do better."

On plans for the future, her parents offered little specific advice. "Dad never says much, but he always tells me that, when I get out of high school, I should try to get a good job. He doesn't say what kind." One of the sisters worked as a telephone operator, the other in a supermarket. Among her friends, some had plans to get a secretarial job, some to get married; some did not know what they would do. Of her own plans, she said:

There are really two things in my mind: movies and secretarial work. You see, when I started high school, I took typing. I had always liked that sort of thing, so I made good marks and really loved it. I decided then that, since I got along so well in typing, I should be a secretary. Then in ninth grade I took speech and dramatics because it had so much to do with acting. Ever since I was old enough to go to the movies alone, I've wanted to be an actress. I'm now taking Radio Workshop and plan to take it in my next two years of school. But I'm keeping up on both my acting and secretarial work. The last I keep to fall back on if acting doesn't work out. I know acting is a difficult field. I've always thought that I'd like to work in a big office. I like to be with people and maybe with important people. I think it would help me get over my shyness. So I suppose I'll start with secretarial work and keep working and save money, then travel some and go to Hollywood to see what I can find there—something to do with acting.

In the case of Nona it seems clear that her high need for achievement has not been channelled into academic lines, although she definitely wants a career. Social pressures have not acted to push her into college nor have identification factors. She gets much intrinsic pleasure from her experience in dramatics, and it is in this area that her need for achievement may find its outlet.

The following case illustrates the effectiveness of social pressure combined with identification, even in the absence of a strong need for achievement.

Louise, a lower-middle-class girl with an average n-achievement score, planned to go to college—a teachers college. "I want to get my Master's degree and teach English," she told the interviewer. When she was a child, two of the most important people in her life were teachers. "They were sweet, wonderful persons. They expected good things of me—excellent marks—and put me in the limelight frequently." Her parents—both had been teachers—also expected her to get excellent marks. "They placed a high value on study and mentioned it often. I think my grandmother mentioned it often, too. She didn't have the opportunity to finish high school and college, and she was always sorry." This atmosphere of great expectations agrees with Louise. She worked hard and did well, pleasing her elders a great deal and getting much personal satisfaction in the process.

In high school, she found another teacher with whom to identify. "My English teacher is a wonderful person and teacher, and does what I want to do. I see my old English teacher occasionally, too, and I would like to be a teacher just like her. I know they both expect good things from me. I made almost straight A's in their classes, but I think I should. English is a natural for me. I've told them of my ambition, and they've encouraged me."

Besides this support, there was encouragement from other quarters. In her circle of best friends—all very good students—two wanted to be English teachers. Her father was very much pleased with his daughter's choice, as was her mother. "Naturally they place a high value on education. They are proud that I have never missed the honor roll, and they hope that I make National Honor Society. My mom and dad have influenced me a great deal, as have my English teachers all along the way. I admire them and hope to do the work they are doing. I know of no reason why I can't be an English teacher. Many others have made it."

MOTIVATION AND EDUCATIONAL ACHIEVEMENT

When a person of high ability falls below his capacity in school achievement, it is both a personal and a social loss, and

this happens so frequently that the problem of *underachievement* is generally considered to be one of the major problems of education for the gifted.

Underachieving is much more common among boys than among girls. With able girls there is sometimes a lack of motivation to go to college, or to get high grades toward the end of high school, but this is due to an alternative motivation to marry and have children, which is generally recognized as a valuable motivation. But with boys there is now seldom an acceptable alternative motivation leading to a constructive life pattern that does not involve educational achievement. When boys could go directly into business from high school, or without even graduating from high school, they did have an acceptable alternative to school achievement. Now that possibility has pretty much disappeared.

STUDIES OF UNDERACHIEVERS

In recent years there have been a number of studies comparing achievers with underachievers in school and college. They have produced substantially similar results and point to underachievement as a form of personal and social maladjustment.

In one or another of these studies, the following characteristics of underachieving able students appear:

1. They see themselves as inadequate persons.
2. They have lower aspirations than achievers.
3. They do not like school as well as achievers do.
4. They do not enjoy learning from books.
5. They have lower popularity and leadership status in the eyes of their age-mates.
6. They tend to come from homes that are broken or emotionally inadequate in other ways.
7. They tend to come from homes of low socioeconomic status.
8. Their vocational goals are not as clearly defined as those of achievers.
9. Their study habits are not as good as those of achievers.
10. They have narrower interests than achievers.
11. They have poorer personal adjustment than achievers.

The psychologists who have been comparing achievers with underachievers generally come out with the view that underachievement is a symptom of maladjustment. Thus, Haggard, who compared high with low-achieving children (all of whom had high I.Q.'s) found in particular that the high achievers in arithmetic "had by far the best-developed and healthiest egos, both in relation to their own emotions and mental processes and in their greater maturity in dealing with the outside world of people and things."¹³

He goes on to say:

The high arithmetic achievers could express their feelings freely and without anxiety or guilt; were emotionally controlled and flexible; and were capable of integrating their emotions, thoughts, and actions. Similarly, their intellectual processes tended to be spontaneous, flexible, assertive, and creative. Of the subgroups studied, the arithmetic achievers showed the most independence of thought, were best at maintaining contact with reality and at avoiding being bound by its constraints, and could function most effectively in the realm of abstract symbols.

In their relations with authority figures and peers, they were more assertive, independent, and self-confident than were the children in the other subgroups. Generally speaking, they related well to others, but, if they felt that attempts were being made to impose undue restrictions upon them, they tended to respond with hostility and self-assertion in order to maintain their independence and autonomy of thought and action.

And finally, Haggard concludes, "Our findings indicate that the best way to produce clear thinking is to help children develop into anxiety-free, emotionally healthy individuals who are also trained to master a variety of intellectual tasks."

Much the same conclusion is expressed by Gowan, after reviewing a number of studies of underachievement. He says, "To summarize, achievement is an indication that the individual has successfully transferred a large enough portion of his basic libidinal drives to areas of cultural accomplishment so that he

¹³ Ernest A. Haggard, "Socialization, Personality, and Academic Achievement in Gifted Children," *School Review*, LXV (Winter, 1957), 388-414.

derives a significant portion of his gratification from them."¹⁸

The conclusion of the various studies is that the gifted person with a high level of achievement has found the way to *enjoy himself* through educational achievement.

METHODS OF INCREASING MOTIVATION

From the foregoing analysis it is clear that motivation for educational achievement is a rather deep-seated aspect of the personality and will not be much influenced by superficial methods which leave untouched the family situation and the person's own self-concept. However, there are some things that can be done in school that are likely to be helpful to at least some underachievers.

Providing models.—Although the school is secondary in importance to the home in the development of the need for achievement and of the value set on achievement, some teachers exert almost as much influence on adolescents as some parents do, and there are attractive adults in the community who might become models from whom children would learn achievement values as well as explicit vocational goals. Schools can bring boys and girls in touch with chemists, engineers, artists, musicians, and writers. This is practiced, for instance, by Evanston High School, T. C. Howe High School in Indianapolis, North and West Phoenix high schools, New York City High School of Music and Art, Bronx High School of Science, and Brooklyn Technical High School.

Children learn a great deal by unconscious imitation of people whom they admire and for whom they feel a special liking. When a man or woman is brought to a group of boys and girls as a club leader, or a teacher, or even an expert who gives a single talk on vocational choice, at least some of the young people will be so attracted to him that they will want to be like him and will unconsciously absorb some of his personality as they associate with and observe him.

It might be good to select teachers with high scores on *need for achievement* to work with gifted youth, on the hypothesis

¹⁸J. C. Gowan, "Factors of Achievement in High School and College," *Journal of Counseling Psychology*, VII (1960), 91-93.

that teachers would have an influence similar to that of parents. At least some such experimental explorations in the teaching of achievement attitudes and values would seem to be indicated by what we know about motivation.

Program methods.—Intrinsic pleasure in learning may be increased by enriching the school program with a wide variety of activities, as well as by improving the teaching in order to make it more challenging and more interesting to the able pupils. This is the one thing that is completely within the power of the school to do, and it should be promoted as the school's most important contribution to the raising of motivation.

Program can also be used to increase the social pressures on able pupils for achievement. There may be awards of various sorts, prizes, publicity for especially good work, honor rolls, and honor societies. There may be assemblies in which the outstanding performers are honored.

The most general form of social motivation is the contest, used especially in science. The Westinghouse Science Talent Search is a powerful influence and an important part of the program of Forest Hills, Bronx High School of Science, and Stuyvesant of New York; Evanston, Illinois; and North and West Phoenix, Arizona. Science fairs cosponsored by Science Service, Washington, D.C., and the local community and school system are reported in several places, including Pittsburgh, Indianapolis, Los Angeles, San Diego, and New York City. These competitive fairs culminate in the National Science Fair.

Guidance and counselling.—The counsellor or guidance advisor, whose main business is with motivation, has different functions at different age levels, and with youth at different stages of motivation. For pupils who are already well motivated for education the guidance function consists of giving information to the pupil and his parents about himself, as well as about the possibilities of the future for him and the kinds of further education that will be most useful. If the family needs financial aid, the guidance expert may be able to help with applications for scholarship assistance.

For pupils who are not well-motivated for education, the counsellor will do what he can in counselling both the pupil

and his parents to increase motivation. Simply giving information about the abilities of the pupil which neither the pupil nor his parents may have known can increase motivation. A personal interview with a guidance expert may have more influence on a pupil and his parents than putting the pupil into a special class for the gifted.

Age-level differences.—The developmental concept of guidance will lead to different kinds of work with pupils of different ages.

At the elementary school level, guidance of the gifted will include looking for special abilities which might escape a crude screening program. It will include interpretation of the pupil's abilities to his parents and to some of his teachers.

At the junior high school level, the guidance counsellor will help the pupil to make certain crucial choices of subjects which will keep the way to college open for him. Here, also, the counsellor will be especially concerned with the pupil's achievement of adolescent developmental tasks, recognizing that they are closely related to his school achievement.

Finally, toward the close of senior high school, the guidance counsellor will help in the choice of college and in presenting an effective college application. At this time tentative vocational choices are being made, and the guidance counsellor can assist by bringing good reading material to the attention of pupils and by putting them in touch with specialists in the community who can explain their vocations to students.

Protecting the student from outside pressures.—Sometimes the guidance counsellor should act to protect the more gifted pupils from excessive one-sided pressures, such as the current pressures on able boys toward the choice of physical science and engineering.

The multi-potentiality of the gifted creates special problems for them in choosing an area of specialization. The most gifted high school graduates generally would be accepted in almost any college, and would do well in several different occupations. The guidance function for them consists of (1) keeping various roads open for consideration, (2) assisting the student to weigh the various possibilities and the appeals that are made to him,

and (3) emphasizing the social as well as the personal implications of choice of vocation and of college.

Generally the counsellor of gifted students will do well to share information about their abilities, as well as about the various possibilities for them. He will not tell them what to become or where to go to college, but will help them to clarify the various possibilities before they make their choices.

QUESTIONS FOR STUDY AND DISCUSSION

1. How is motivation for education related to the social class background?

2. Read the booklet entitled *Guidance for the Underachiever with Superior Ability*, edited by Leonard M. Miller and published in 1961 by the U.S. Office of Education. How do the procedures recommended in that book relate to the theory of motivation set forth in this chapter?

3. Select several of the practices recommended in the North Central Association's book, *Working with Superior Students*¹⁷ and discuss them critically from the point of view of motivation theory.

4. Read carefully the article by Rosen and D'Andrade,¹⁸ and then discuss the origins of achievement motivation.

5. Select two contrasting cases of educational motivation from the case book compiled by Rothney,¹⁹ and try to explain the differences in motivation.

6. How do you think a bright girl who wants a career would differ from a bright girl whose primary interest is marriage and a home in her attitudes toward schooling during her last year in high school?

7. Discuss the pros and cons of competition for grades in the motivation of able youth for education.

¹⁷Bruce Shertzer (ed.), *Working with Superior Students*; A publication of the North Central Association Project on Guidance and Motivation of Superior and Talented Students (Chicago: Science Research Associates, 1960).

¹⁸Bernard C. Rosen and Roy D'Andrade, "The Psychosocial Origins of Achievement Motivation," *Sociometry*, XXII (1959), 185-218.

¹⁹John W. M. Rothney, *The High School Student: A Book of Cases* (New York: Oryden Press, 1954).

Creativity and Creative Thinking

One of the goals of education should be to help gifted children become more creative. Every child should have the chance to experience the thrill of creating new things in the classroom, but it is particularly important for gifted children. Not only will their creativity bring them personal satisfaction, as it does to every child, but their creations and inventions will also be the means by which society will advance in the future. Less able children will be able as adults to maintain the advances that society has made; but it will fall upon the superior child to make the further advance.

Creativity is something that can be taught. It is also something that can be discouraged and allowed to atrophy. Since creativity can be taught, it is important for educators to put their minds to the task of developing it in every child but in particular in the gifted child.

But one may ask, what does creativity mean and how can the school promote creative activity?

As soon as the analysis of creativity and the creative process is commenced, it becomes clear that different people attach different meanings to these terms. Wilson has listed the following examples of the diverse meanings of "the creative process."

1. The outflow of energy of individual or group through which a product is structured.
2. An action of the mind that produces a new idea or insight.
3. The mental process of manipulating the environment which results in the production of new ideas, patterns, or relationships.
4. The capacity to produce through thought or imagination; capacity for original work.
5. The emergence in action of a novel relational product, growing out of the uniqueness of the individual, on the one hand, and the materials, events, people, or circumstances of his life, on the other.
6. That mental process that involves the rearrangement of past experience with possibly some distortion, into new patterns to better satisfy some expressed or implied need.
7. That process which results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time.
8. The creative process is any process by which something new is produced—an idea or an object including a new form or arrangement of old elements. The new creation must contribute to the solution of some problem.¹

For our purposes, creativity is the quality which leads to the production of something new and desirable. The new product may be new for the society, or merely new for the individual who creates it. If new for the society, the product must be prized and desired by a group in the society. If new for the individual, the product must be prized by the individual who creates it. In this chapter we shall be concerned primarily with creative activity in the personal sense.

ANALYSIS OF CREATIVE ACTIVITY

There is a traditional analysis of creative activity, or of "the creative process" which has been used by numerous writers in their discussion of creative activity in art, science, mathematics, poetry, etc. According to this analysis, the creator goes through (1) a period of preparation, (2) a period of incubation, (3) an

¹ A number of illustrations and ideas in this chapter have been taken from the excellent chapter written by Robert C. Wilson on "Creativity" in *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II. Chicago: National Society for the Study of Education, 1958).

illumination, or moment of creative insight, and (4) a period of verification.

The *period of preparation* consists of two rather different phases of activity. The first phase is a growing sensitivity to a problem or a growing awareness of a need. It is characterized by vague feelings that something is not quite right, or that there is an opportunity to try something different. An eighth-grade pupil, after studying the Revolutionary War period in social studies, had an undefined interest in the Battle of Bunker Hill but found it difficult to clarify what he wanted to do or how to communicate what he felt. Should he write about it or draw it? The impetus of the creative activity was the child's unformulated interest in the topic, which was nourished until it became a full-blown project. After discussing it with his teacher and parents, he decided to paint a mural.

Scientists report that their creative endeavors are sometimes stimulated by a mistake or an incorrect solution to a problem. The recognition of an error can galvanize the creative process in them for work whose end even they cannot predict.

This sensitivity to one's own needs or to an external problem is the starting point of the creative process. Many times, teachers and parents discourage it in children by avoiding their questions or becoming impatient with their curiosity. The father who continually brushes off his son's questions with, "I don't know, I'm no expert in that," makes it difficult for him to develop this sensitivity. How much better it would be for him to say, "I don't know, but let's try to find out about it together."

The second phase of preparation is a time of *searching*. The search may be for a technique with which to express the vague idea sensed in the first stage, or it may be for the answer to the problem formulated earlier. As the searcher collects his data, the problem gradually becomes more defined. Many false starts may be made, and partial solutions may be uncovered, but during this period he usually works intensely on the problem. If a solution or a technique is not forthcoming, his energy is gradually depleted and replaced by mounting frustration.

For example, the boy, in depicting the Battle of Bunker Hill,

attacked the problem vigorously when he had decided to paint the mural. The subject was difficult, however, and as work progressed, he ran into one problem after another. His major problem was one of technique: how to depict circular objects, such as wheels, in perspective. His inability to solve this problem sapped his energy and slowed down his progress.

During this phase, it is important for the individual to be able to develop a large arsenal of ideas with which to attack the problem. This is the material from which he may be able to select his final answer. The more productive and fluent he is with his ideas, the greater is the probability that he will come up with the correct answer. During this period it is also important that he be able to redefine his problem, to look at it first in one way, then in another. This requires flexibility in his approach; he should be able to shift gears, so to speak, and to try many different approaches to the problem.

The period of searching sometimes leads to the obvious answer or solution without much delay, but often instead it leads to a kind of *plateau* stage or period of *incubation*. During this period the individual may give up working on the problem temporarily, from either exhaustion or frustration, and may retreat from his conscious attack on the problem. It may be a time of intense emotional upset for the individual.

Although no noticeable progress is made, it may be a time of unconscious problem-solving. During this period it seems that a reorganization and reintegration of the problem is taking place within deeper recesses of the individual.

The next stage of creative activity can be called the moment of *creative insight*. The nature of the moment of creative insight varies from one individual to another, as well as from one kind of problem to another. To individuals who are working on a difficult problem and have reached a plateau in their efforts to find a solution, it may suddenly appear in almost complete form. The emotional balance of the individual is thereby restored and a good deal of energy is released. Other individuals, however, may not experience a flashing moment of insight. Their insights may be distributed over a period of time, broken up into a series

of smaller insights. Such an individual may even be able to avoid a painful plateau, proceeding to the solution of his problem from one insight to another until the total problem is solved.

The boy painting the mural was blocked for a time because he was unable to correct the perspective of the wheels of the cannon. His insight came when he was able to perceive the wheels as ellipses. He was then able to apply this insight into perspective to other problems facing him in the production of the mural.

Insights are often brought to the surface in strange ways. The accidental occurrence of a physical sensation may bring to mind a forgotten idea related to the problem at hand. A smell, taste, sight, or touch may call forth a conversation or a book with which the idea was associated in the past.

Insights often occur upon the cessation of mental activity. In the semiconscious state between waking and sleeping, an answer to a problem sometimes finds its way to consciousness. Insights often occur in moments of routine physical activity, such as getting dressed or taking a walk. One might suppose that the mild exercise drains off the effects of frustration, leaving the experiences and half-formed solutions available to be recalled and used in the total solution. The resolution of personal conflict, through psychotherapy for instance, often permits insights which the conflict, being a form of frustration, usually acts to block.

Aesthetic experiences often produce insights. Listening to a symphony or looking at a painting sometimes acts as a catalyst that ties together the necessary bits of previous thinking into a total insight.

The period of insight or illumination often produces such an onrush of ideas and impressions that the artist or the creative thinker is in a frenzy to capture them before they escape. This creative moment is very intense and is brought about by a delicate balance of powerful emotional and intellectual forces within the individual. Intense concentration is required to hold these forces in proper balance. Any interference or interruption (such as the rigid demands of some teachers for correct penmanship, spelling, and grammar) is likely to destroy the whole

pattern of impressions and half-formed ideas, thereby frustrating the individual's attempt to capture them. This holds true for children as well as adults. Creativity is a hard master and requires all that an individual can give.

The final period may be called the *period of confirmation*, in which the solution of the problem is evaluated, elaborated, integrated into the total field of knowledge, and checked against other people's evaluations.

These stages are not always clearly defined in the creative activity of any one person. As we have already said, the plateau stage may be completely missing, particularly if the problem is not too difficult and insights come quickly.

The stages of creativity are particularly indistinct in children. Children, since they are usually unable to tolerate much frustration, are likely to reject a problem rather than suffer through the pains of the plateau period. Children are apparently able to live comfortably with large areas of unexplained experience without being unduly irritated or upset by them.

This formulation of the creative process has been verified in numerous reports by creators—artists, inventors, writers, scientists—of their own experience. While it never takes exactly the same form twice, even for a particular individual, the general characteristics of the process are there.

PERSONAL FACTORS AFFECTING CREATIVITY

✓ Creativity is affected by the types of ability a person possesses, his personality, and his interests. Hence, it will not be expressed in the same form by all people. A person who is particularly sensitive to his own feelings and to the emotions of others, who seems to have keen insight into the ways other people are thinking and feeling is likely to be led by these qualities into the affective use of language and symbols. That is, when he writes or speaks, his words may bring forth vivid images in the minds of other people. He will be able to write or use other artistic means to arouse emotional responses in others. This sort of creativity might be called *affective creativity* and is most likely to be expressed in the arts.)

One who prefers to deal with functional problems and with

practical situations, such as those of technology, mechanics, and social situations, may show his creativity in solving problems. He is less interested in his own and in other people's internal state of affairs, their feelings and emotional responses. He may like to work puzzles and will spend hours trying to figure out a better way of doing things. This is what might be called functional or *problem-solving creativeness*.

These is, on the other hand, a third kind of creativity. A person who has no particular insight into people's feelings nor is very much concerned about practical problems may like to get at the reasons behind things. He may like to categorize, to find abstractions and generalizations, and to look at things from a scientific point of view. He may enjoy developing clear, abstract definitions of things. Science and philosophy hold intense interest for him. He prefers to deal with ideas and concepts rather than with affect or concrete situations. His creativity might be called *abstract or formal*.

It is clear that each needs to be understood for what he is so that he may become creative within the area of his preference. One probably needs practice and experience in capturing the emotional aspects of a situation, whether it be with a paintbrush, words, or through dramatization. Another needs to learn techniques of getting a large number of potential answers, of working with many different ideas in order to become still more effective in problem-solving. The last needs practice in dealing abstractly and in exploring what others have thought about the things he is interested in.

Every child probably has some creative ability, though some obviously have more than others. Two children of equally high intelligence may differ greatly in the degree of creativity they show. Every teacher knows of gifted children who can transform a fresh, exciting experience into a conventional, unexciting one. After visiting the zoo with her classmates, for instance, one child wrote the following letter to her grandmother:

Dear Grandma:

Yesterday we went to the zoo. We saw the bears, the lions, and the seals. The man was feeding fish to the seals. We ate lunch and soda pop. Then we came home.

Another child, however, captured this exciting event in an unconventional and refreshing manner:

Dear Grandma:

How would you like to be a seal and have a man throw fish to you for supper? Wouldn't that feel funny? The seal that we saw at the zoo seemed to like to get his supper this way. If the caretaker didn't throw him his fish fast enough, he splashed in the water and barked like a dog.

The lions and bears learned so many new tricks since the last time I saw them that they must have been busy every minute studying them. Do you suppose they have classes like we do in school?

I have so many things to tell you about the zoo that I'll have to hurry over and visit you again some day soon.

The creative personality.—Studies have recently been made to find out what personality qualities go with creativity. These qualities probably vary with the field of work or interest. One such study, made by Cattell and Drevdahl,² compared scientists who are especially creative with science teachers and administrators and with the general population. The creative scientists were found to be more self-sufficient and more introverted, to have a greater drive for dominance or mastery, and to entertain more radical ideas.

✓ There is also a relationship between social attitudes and creativity. The study of Warren and Heist³ indicated that intellectually gifted students are less authoritarian and less rigid in personality than average students. High scores on measures of authoritarian tendencies are likely to be associated with social prejudices. The person with authoritarian tendencies may depend on authority-persons for his attitudes, and he is likely to be anxious, rigid, and insecure. This kind of anxiety may make him do well in cut-and-dried tasks, such as learning grammar and spelling; but he may be unproductive in situations requiring flexible and creative thinking. ✓

²R. B. Cattell and J. E. Drevdahl, "A Comparison of the Personality Profile (16 P.F.) of Eminent Researchers with That of Eminent Teachers and Administrators, and of the General Population," *British Journal of Psychology*, XLVI (1955), 248-61.

³Jonathan R. Warren and Paul A. Heist, "Personality Attributes of Gifted College Students," *Science*, CXXXII (August 5, 1960), 330-36.

CREATIVITY AS PROBLEM-DISCOVERY

For school children perhaps the full amplitude of the creative process must be reduced because of their immaturity and their lack of experience or preparation for the creative solution of complex problems. They will often work hard at the discovery of something that is neither novel nor difficult in the eyes of adults.

✓However, one aspect of the creative process appears to be especially appropriate for children—that of *problem-discovery*, a part of the first stage. If children can be encouraged to learn the art of discovering problems in such a way that they retain this art as they grow older, they will be well started toward adult creativity. Problem-discovery requires flexibility of mind, fluidity of thinking, and “divergent thinking,” a concept which will be explored next.✓

CREATIVE THINKING

Creativity certainly has a great deal to do with thinking. The creative person thinks differently from the non-creative person. Therefore, creativity should be regarded as an intellectual quality, and not only a quality of personality. There should be ways of measuring the intellectual quality of creativity and of comparing it with intelligence, which the I.Q. tests measure.

Is the ability to think creatively the same thing as intelligence, or are the two separable entities? If they are separable, what relation do they have to each other? Guilford and his students⁴ have studied and measured creative thinking ability, and they believe it to be somewhat different from what is ordinarily meant by intelligence.

They speak of “convergent intellectual ability” as opposed to “divergent intellectual ability.” The ordinary intelligence test, they believe, is a test of convergent intellectual ability. It favors

⁴J. P. Guilford, “Creativity,” *American Psychologist*, V (August, 1950), 444-54; J. P. Guilford, “The Relation of Intellectual Factors to Creative Thinking in Science,” *University of Utah Research Conference on the Identification of Creative Scientific Talent* (Salt Lake City: University of Utah Press, 1955), pp. 69-95; Robert C. Wilson, J. P. Guilford, P. R. Christensen, and D. J. Lewis, “A Factor-Analytic Study of Creative Thinking Abilities,” *Psychometrika*, XIX (December, 1954), 297-311.

the pupil who is retentive and docile—who tends to seek the single, pre-determined "correct" answer to an intellectual problem. The ordinary intelligence test does not give much credit to the pupil who is constructive and creative—who tends to seek the multiple, experimental, novel answer to a problem. This latter type of person has "divergent" or creative intellectual ability.

In order to study the relationship of convergent and divergent intellectual abilities among gifted children, Getzels and Jackson tested the children in a private secondary school which had a good many high-I.Q. pupils.⁸ They used Stanford-Binet intelligence test scores for a measure of convergent intellectual ability, and a battery of "creativity" tests devised by Guilford as a measure of divergent intellectual ability. They then separated the two groups for comparison.

One group, called the High Creativity Group, included those boys and girls in the top 20 per cent on the creativity measures who were below the top 20 per cent in I.Q. The other group, called the High Intelligence Group, included those students in the top 20 per cent in I.Q. who were below the top 20 per cent in creativity.

The I.Q. of the High Intelligence Group averaged 150, while that of the High Creativity group averaged 127. When the two groups were compared on standardized achievement tests, they were found to be very similar, and both well above the average for the school as a whole. Thus the High Creativity Group, though substantially below the High Intelligence Group in I.Q., did as well as the High Intelligence Group in tests of knowledge commonly taught in the schools.

Getzels and Jackson asked the teachers to rate all the secondary school students on "the degree to which they liked having them in the class." The teachers definitely preferred the convergent group to the divergent intellectual ability group.

On a thematic apperception test which was scored for qualities of fantasy, the creative or divergent group was higher than the convergent group in the use of unexpected endings to the

⁸ Jacob W. Getzels and Philip W. Jackson, "The Study of Giftedness: A Multidimensional Approach," *The Gifted Student* ("Cooperative Research Monograph," No. 2. (Washington: U.S. Office of Education, 1960)), pp. 1-18.

stories, humor, incongruities, and playfulness. They showed their greater creativity in the way they handled ideas on this test.

✓ THE ELEMENTS OF CREATIVE THINKING

Guilford and his students undertook to discover and define the complex of abilities that together make up creative thinking. They devised tests to explore each of a number of possible components, and eventually established seven somewhat different but related abilities as follows:

1. *Sensitivity to problems.*—This means awareness of defects, needs, and deficiencies in the environment. A test of this ability is a set of questions asking for the defects which might be improved in common appliances, such as a refrigerator, or social institutions, such as the school.

2a. *Associative fluency.*—This is the ability to think of words rapidly that meet certain requirements, such as being synonymous, or being opposites.

2b. *Ideational fluency.*—This is the rate at which a person can think of ideas. For example, a person may be asked to think of as many uses as possible for a common brick.

3a. *Spontaneous flexibility.*—This is the ability to strike out in a number of different directions in one's thinking. For instance, in the question about "uses of a brick," those who have much spontaneous flexibility will think of a variety of uses, taking account of the various qualities of a brick, such as weight, solidity, abrasive qualities, and size.

3b. *Adaptive flexibility* is the ability to change the direction of one's thinking in order to keep up with a changing problem situation. Thus, if one is thinking of uses of a brick, the test may require one to change from uses of a single brick to uses of several bricks at a time to uses which require the brick to have a certain color to uses which depend on the density of the brick.

4. *Originality* is a quality which can be demonstrated in several ways, one being the uncommonness of ideas a person has, another the ability to produce clever, "original" titles for stories, and another being the ability to see unusual consequences of

outlandish hypotheses, such as, "What would happen if people only had 3 fingers?"

5. *Redefinition* or the *ability to improvise* operations in situations where a familiar object may be used for unfamiliar functions, such as in the question, "what are the various devices for pounding a nail into a wall as a picture-hanger?"

TEACHING CREATIVE THINKING IN SCHOOL

The elements which have just been listed adhere mainly to the first step of the creative process, namely, the *preparation for creativity*. They have to do with thinking fluently and freely about problems and seeing a great variety of possible solutions.

These abilities, it would seem, might be encouraged or discouraged in a school. Some of the ways of encouraging creativity and giving children practice in creative thinking follow.

Brainstorming.—This can easily be done in a class. The purpose is to obtain as many ideas as possible on a particular problem in a short time. The following rules may be followed:

1. *Judgment is ruled out*. Criticism of ideas must be withheld until later.

2. *"Free-wheeling" is welcomed*. The wilder the idea, the better; it is easier to tame down than to think up.

3. *Quantity is wanted*. The greater the number of ideas, the more the likelihood of winners.

4. *Combination and improvement are sought*. In addition to contributing ideas of their own, participants should suggest how different ideas can be combined.

A problem may be written on the board and the pupils asked to suggest as many ideas as possible. No idea is rejected, for each idea brought out stimulates others. At times the ideas will tumble out so fast that the teacher will have difficulty keeping up.

Only after all the ideas have been brought out does evaluation take place. The class goes over the list selecting those ideas that seem most likely to work, modifying some ideas to workable form, and rejecting those that seem unworkable.

Brainstorming may be used with almost any type of problem. It may be used with school and classroom problems such as,

"What can we do to make our schoolroom more interesting and more comfortable?" "How can the line in the lunchroom be speeded up?" "What questions would be most interesting to study in this unit?"

Sensitivity to problems.—In trips taken by the class, students may be asked to list questions that occurred to them as a result of what they observed. Another possibility is to use the "what would happen if . . ." lead for classroom exercises. Some examples are: What would happen if:

- pills were developed which would substitute for food?
 - everyone in the world were suddenly to become deaf?
 - everyone always told the truth about everything?
 - we had only three fingers?
 - we all lived the Golden Rule?
 - we knew when we would die?
 - the ocean dried up?
 - the air all over the world became radioactive?

Ideational fluency.—In addition to "brainstorming" some of the following assignments may be used to help children to increase their flow of ideas:

1. List on a piece of paper all the uses you can think of for a brick. You will have five minutes.
2. List as many things in the shape of a square as you can think of. You will have five minutes.
3. If you were exposed to extreme cold, what things might bring you comfort? You may use an adjective along with the noun but do not use verbs. You may write for four minutes.
4. List all the things that might bring you comfort if you were hot. You may write for four minutes.
5. Surplus foods in our country are stockpiled in great storage houses. What suggestions do you have for taking care of our surplus food problem? List as many as you can in eight minutes.
6. Old light bulbs are usually thrown away. How many uses can you think of for an old light bulb? Write as many as you can in five minutes.
7. In how many ways can water be made to work for you?
8. If you had an evening to spend alone at home, list all the ways you think of that you might entertain yourself.

Originality.—The aim is to encourage children to say or do things in an uncommon way. For example:

1. The teacher can write a simple sentence on the board, for example, "He threw the ball." Next she can ask the class how many different ways the sentence might be written, letting the children use their imaginations freely. What kind of boy was he? Why was he throwing the ball? Next the teacher can ask them to work on the verb. In how many different and more colorful ways can his action be described? Next, what about the ball? What kind of ball was it? What did he want to do with the ball? This procedure illustrates a technique important in developing insights, namely, that of asking each pupil to place himself in the position of an imagined or real character and attempting to see the world through his eyes.

2. In presenting reports, as in connection with a social studies unit, the pupils are told that they may use any method *other* than reading to or telling the class. Teachers who have used this approach report that pupils are often ingenious in their methods of presentation, and the class members generally are more interested. Pupils individually or in groups may decide to use dramatizations, quiz sessions, opaque projectors, tape recorders, and interview techniques. The possibilities are innumerable, but the important aspect is that the particular method of presentation decided upon originate with the pupils and that the obvious methods of reading or telling be ruled out.

3. An adaptation of the above technique is "selling a book." Instead of presenting a book report, their problem is to put themselves in the position of a person trying to sell the book to the rest of the class. They may use any technique they wish to arouse the class to want to read the book.

4. Let the pupils pretend they are going to write a poem about spring (or any season of the year). Suggest to them, "Everyone will have an opportunity to go to the window and look outside for a few minutes. When you come back to your seats, you will write down all the things you saw that you would not have seen on a rainy winter day. If you write something that no one else noticed, your score on that word will be *ten*. If only two or three people in the room noticed it, your score on that idea will be *five*. If more than five noticed it, just take the score of *one*. You will see that the closer you observe and the more uncommon are your responses, the

higher your score will be. We'll take four minutes to look out the window and six minutes to write our list of things seen that you would not have seen on a rainy winter day.

"We will put all of your ideas on the board now and score them. As each one goes on the board, I will ask how many thought of the same item and we will score it accordingly. You put the score for that item on your paper and at the end you will add your scores."

5. Have each child draw three random lines in color crayon on the upper part of a sheet of paper. Have the children exchange papers. Each child then draws a picture incorporating the lines into the picture; he is to name his picture and write a story about it. Children should be reminded that in a story: (a) something must happen, (b) it must happen in sequence, (c) it should have a definite ending or a punch-line.

6. Read several tall tales to the children. Have the children discuss the elements which make a good tall tale by comparing different ones. What is the role of exaggeration? What is the role of plausibility? What is the role of the ridiculous? Have the children compare tall tales with fairy tales, folk tales, myths, or science fiction stories. How do they differ? How are they similar? Have the children write their own tall tales.

Redefinition.—Improvising with materials at hand for a number of ordinary problems may be useful.

1. Ask the children to suggest as many solutions as possible to problems of the following type:

You are going on a picnic with your family to an isolated spot along a river. The river bank is covered with large rocks; there are small trees and a sandy beach for swimming. After working up an appetite, you discover that you have forgotten the frying pan in which you were going to fry the steak and potatoes. You have no other cooking utensils except forks, knives, and paper plates. You have the means of making a fire. How will you cook the steak and potatoes? Can you think of a way to fry the steak without a pan or other conventional cooking equipment?

One possible solution: Heat a large rock and fry steak on the hot rock. Steam potatoes wrapped in wet sand with fire on top.

2. The top of a salt shaker is stuck and you are not able to twist it off with your hand. You don't want to risk damaging it by banging on it with a knife. You can't find the pliers. Can you think of

something around the house that might substitute for a pair of pliers?

Possible solution: A nutcracker.

BLOCKS TO CREATIVE THINKING

One of the most important aspects of the problem of helping children become creative is that of developing within them the motivation to be creative. The desire to be creative can be stifled by the normal classroom practices. Some of these are listed below.

1. *High standards of achievement for low level of work.*—Gifted children are usually expected to do the same work that average or even below-average children are required to do. They are expected to write out every step of their arithmetic problems, to copy their compositions neatly, to write reports in a prescribed form, to color the mimeographed cutouts. One eighth-grade teacher, for example, wondered what she could do to make a boy in her room with an I.Q. of 150 want to write out his reports in science, English, and social studies in the way the other children did. "He simply refuses to write out his work. I don't know what I can do to make him do this." A battle of wills was in progress between the teacher and the boy.

The teacher was asked to consider the mental age of the boy, as measured by the I.Q. test. When she realized that it was the same in some respects as an average college freshman, she developed a somewhat different perspective on what she had been expecting the boy to do. Here was a boy who could quite easily do some kinds of advanced high school work, whose extra time could be spent in creative activities, but who was tying up all his energy in opposing the teacher's standards of achievement for work that was utterly boring to him. As a result, the teacher worked out a special opportunity for the boy to take high school physics and chemistry along with his eighth-grade work.

But not all children will be able to resist. If schools do not hold up high standards of achievement and if opportunities for advanced and challenging work are not offered, creative children will probably not be able to withstand the pressure to conform to the standards of mediocrity in their own age group.

2. *Inflexibility of assignments and methods of work.*—One teacher of a second-grade class complained that her youngsters did not know the "addition facts" when they entered her grade. She spent most of the year, she said, trying to teach them these facts. The method consisted of their memorizing the addition and subtraction tables. One day a very bright girl came up to the teacher's desk to tell her of a new way she had learned to add 9 and 5. She explained, "The answer is always a number which is one less than the number you are adding to 9, plus a 10." The explanation was crude but the insight was sound. The teacher, however, had a different explanation. She said impatiently, "You wouldn't use a crutch to walk with, would you? Well, I want you to throw away that crutch that you are using in your addition. You must memorize that 9 plus 5 is 14, and not rely on that silly crutch you thought up."

3. *Impatience of adults.*—Some teachers and parents hold adult standards of perfection which are so important to them that they cannot bear to see children's work fall short of these standards. They are tempted to draw the picture themselves rather than let the children do it and perhaps make a mistake or fall short of the adults' expectations. Their criticism kills creativity.

4. *The teacher's attitude.*—The teacher's attitude toward creativity in the fine arts and the practical arts affects what she does to help children with abilities in those areas. The teacher who dislikes a particular subject may unconsciously communicate this dislike to the children. She may not teach the subject at all, or, if she teaches it, she may do so with less animation than she gives to the teaching of her favorite subject.

There are probably other factors that decrease the motivation of children for creativity. The ones listed above, however, serve to illustrate how schools sometimes tend to discourage it seriously.

CREATING A STIMULATING CLASSROOM ATMOSPHERE

The teacher can help in an indirect way the talented and creative children in her classroom. She can provide an atmosphere in the classroom free from criticism, from undue tension, from em-

phasis upon adult standards, and from competition, particularly in matters of art. For freeing creativity in the fine arts, in particular, an atmosphere of spontaneity, relaxation, and enjoyment is essential. It is difficult to see, for example, how a youngster can continually stay with his artwork if he meets with harsh criticisms or if his work is belittled, ignored, or compared adversely with adult standards. Spontaneous enjoyment of a child's art work, on the other hand, encourages him to attempt more work, assures him that he is free to experiment and try out things for himself. In such an atmosphere talent unfolds.

To illustrate the importance of appreciation, consider the girl who composed a little song at home using the word "chimpanzee," which she contracted into two syllables to fit the cadence and repeated them throughout the song as "chimp'zee." The youngster was delighted with her first efforts at a musical composition. She hurried to school to show it to her teacher and was crushed when the teacher informed her that her song would never do because the word "chimpanzee" consisted of three syllables. Later in the day, however, the girl showed her musical composition to the "practice teacher," who immediately sat down at the piano with her and played it and by means of her appreciation restored the girl's confidence in her own creative efforts.

The teacher can also communicate to children a belief in their potentialities in these special areas. Most adults can easily believe in the inevitable unfolding of a child's potential intellectual abilities if these are given the right kind of encouragement. Such belief grows out of the almost universal experience of being educated. But belief in the unfolding of the creative artistic potential in children is another matter. Some teachers and other adults have never experienced the unfolding of their own artistic ability and can hardly believe it possible in children. Besides, children are often so inept in their first attempts at artwork that it is easy to believe that no ability is there. Many artists, writers, musicians, and actors, however, are convinced that some amount of talent resides in everyone; they have not the slightest doubt that it would develop quite as readily as mental ability if given the right educational environment. The class-

room teacher needs to develop the same conviction and needs to communicate it to the children.

It is much more important for the teacher to help a child discover the medium suited to the expression of his ability than it is to teach the technical aspect of music, art, or writing, particularly among young children. Freedom to experiment in a classroom with different media and with different areas of artistic expression in the practical arts will help a child discover and broaden his abilities. Some children, for example, detest artwork but love to write, while others write only with great effort but find themselves thoroughly at home with musical instruments.

Teachers, like most adults, are not particularly talented or well trained in the fine arts. They often shy away from them because they feel they cannot give children help in the technical aspects of these arts. In many respects, however, the technical aspects are the least important part in developing talent. They can be safely left to specialized teachers, either in the community, in the high school, or in post-high-school training. The classroom teacher's role is to help children discover their strengths and give them opportunity to experiment and try out various ways of developing their abilities.

Specific classroom procedures for developing a creative atmosphere.—A teacher can do several specific things besides providing the general atmosphere conducive to creativity to develop special creative abilities in her classes. Her most important obligation is to encourage the artistically inclined youngsters to make posters and illustrations, to make murals and dioramas, to fill notebook after notebook with sketches, to use extra available class time for artistic purposes. She can also make extra time available to them during the day for artistic activities. She can encourage youngsters who write well to write stories and poems, to experiment with words, to write diaries and journals. The scientifically inclined youngsters can be encouraged to read, ask questions, experiment. In other words, the teacher can become a source of stimulation to produce and to perform.

The teacher can provide material in the form of supplies, books, and articles that will stimulate gifted children. In order to do this, the teacher herself should be alert for reading matter

that might interest them. Many teachers gather old magazines from friends and relatives to be used in the classroom and are alert to new books that appear in the library.

The teacher can also serve, with the other children, as an audience for whom gifted youngsters can perform. Teachers can provide time for artwork to be displayed, discussed, and appreciated by others. Time can be set aside in which to read poetry or essays or stories written by class members. Youngsters gifted in science can find a ready audience for demonstrations if the teacher will provide classroom time for them. A mechanically inclined youngster can display and explain his project to the class.

Having an appreciative audience available is extremely important. The artist, actor, and musician find an audience indispensable. Any youngster who is creative has an almost uncontrollable urge to communicate his ideas. It is in this way that every classroom teacher can indirectly foster and encourage special abilities in children in her classroom.

QUESTIONS FOR STUDY AND DISCUSSION

1. Write an essay justifying a program aimed at developing creativity in children as adequate for the enrichment of their experience. That is, defend the proposition: Opportunity and encouragement for creativity is a good and adequate form of enrichment.

2. What suggestions have you for training in creative thinking at the high school level? Most of the examples in the text are taken from elementary school practice.

3. Discuss critically the distinction between divergent and convergent thinking. How can a person have a fairly high degree of both? (There is a positive correlation between them.)

4. If you were a college admissions officer and you wished to take account of the creativity of applicants in deciding whether to admit them to your college, how would you go about getting information on this matter?

5. Discuss the pros and cons of "brainstorming" for a class in elementary school.

Development of Non-Academic Talent

This book advocates the principle that the schools can and should accept responsibility for developing a wide diversity of talent, both intellectual or academic talent and non-academic talent. While society's mandate regarding the development of a diversity of intellectual talent is clear and generally accepted, it is not so clear in regard to development of non-academic talent. Schools have accepted varying degrees of responsibility for developing the non-intellectual talents in social, artistic, and mechanical areas. Although there is probably general agreement about the value of diversity of non-intellectual talents, there is also a greater convergence of emphasis on science and technology, an increasingly materialist standard of living, and a consequent emphasis on intellectual talent. Warren and Heist,¹ for instance, reported that high school boys who elect to go into science in college have a better chance of being nominated for National Merit Scholarship competition than boys who do not.

The artist is probably in more danger than ever of being ignored and bypassed by our materialistic culture. For this reason, as well as for its intrinsic value, the importance of art needs to be re-emphasized. Mechanical ability is also likely to be

¹ Jonathan E. Warren and Paul Heist, "Personality Attributes of Gifted College Students," *Science*, CXXXII (August, 1960), 330-36.

slighted or considered appropriate only for slow learners. Social leadership is largely bypassed in many school curriculums, although it is developed informally in extracurricular activities.

THE DEVELOPMENT OF SOCIAL LEADERSHIP

Emphasis on the problems of educating gifted children for leadership is needed because it is generally conceded that gifted children are likely to become leaders in adult life. Passow asserts, "Because the gifted youth of today may be the leader of tomorrow, he must learn to understand and appreciate his responsibilities to society as well as its rewards." Later he says, "The talented, as our future leaders, will come nearest the ideal of benefiting mankind only if we present them with the kinds of educational experiences which stimulate democratic attitudes, tolerance, sensitivity to the problems of their fellow man, and self-understanding. . . . How often we hear complaints about the caliber of some of our politicians! Yet many able persons seem to steer away from political leadership."²

It is obvious that society and the free world will continue to need a high caliber of leadership for years to come. If we hope not only to hold the freedom and the peace that we now have but also to extend it to those people who do not enjoy it, we must, of necessity, think big in terms of leadership and somehow communicate that thinking to our future leaders.

Many different definitions of leadership are given because leadership has many facets. The subject can be treated from philosophical, ethical, political, economic, and historical points of view. Each furnishes sufficient basis for extensive exploration. For educators, however, the most fruitful definition is taken from the sociopsychological point of view and it is from this viewpoint that leadership will be defined for purposes of this chapter.

LEADERSHIP IN THE CHILDREN'S WORLD

In the early primary grades, the child's social world is determined largely by the adult teacher. Formal leadership positions

² A. Harry Passow, "Talented Youth: Our Future Leaders," *Teachers College Record*, LVII, No. 3 (December, 1955), 167-68.

are simple; they consist of helping the teacher or other children, getting milk during the rest period, and other such tasks. Those who fill such positions are usually chosen by the teacher. Informally, children already influence each other in the primary grades, and leaders begin to be visible.

As children move up the age-grade ladder, they are gradually given a larger voice in determining who shall fill the leadership positions and may even assist the teacher in choosing which positions will be established. In the process of doing so, they learn a good deal about the formal operation of a democracy.

As children develop further in the elementary grades, they begin to work out their roles and relationships in their own "peer culture," aside from the more formal aspects of their group life that is still largely dominated by the adult teachers. A child may be a leader in one world and not in the other; for instance, one may lead a discussion in the classroom, but another may dominate the group that plays softball after school. Generally, however, there is a rather strong tendency for a child who is a leader to be a leader in more than one kind of activity.

Gradually the peer group assumes more importance in the child's life until in adolescence it is often more decisive in determining behavior than is the adult world. There are still points of contact between the adult and the adolescent world. Leadership positions, determined by adults are still important to adolescents. Such positions as membership in the student council, presidency, editorships, and offices in extracurricular clubs are valued by them, but holding positions of leadership in their informal gangs and cliques may cause conflict among adolescents. Being an academic leader, for instance, is not likely to be as important as being popular in one's friendship group.

Children recognize those who are leaders and why they are leaders. They consider brains, physical strength, nice clothes, and friendliness to be properties that give leaders power and influence over others. Sociometric techniques are based on the ability of children to perceive and evaluate leadership characteristics in each other. Adolescents can tell who are the wheels, the brains, and the squares. Such designations are based on what they ob-

serve in each other as they live and move in the adult-oriented world and in their own peer culture.

ANALYSIS OF LEADERSHIP

A leader may be defined as a person who exercises influence or control over others as they pursue a common end. He may do so by virtue of his personal characteristics, insight, will, and ability; or he may do so by virtue of an office he fills, such as a chairmanship or presidency of an organization. A leader is often, but not necessarily, the central person in a group. On sociometric instruments he is often a "star," the one most frequently chosen by the group.

Extensive research studies have been made to discover if there is a general leadership trait and if so, what it is. No trait or set of traits, however, has been found to distinguish all leaders everywhere from non-leaders. What is true of the characteristics of gifted children in general appears to be true of persons showing leadership characteristics as well: They are, generally, better human specimens. Most studies show them usually taller, heavier, healthier, and more energetic. They are generally more intelligent, outgoing, cheerful, and enthusiastic, and they tend to have greater self-assurance and self-confidence, to be more sociable and to have greater perseverance. But having such characteristics does not necessarily make one a leader.

Research has also been done to discover whether leadership changes from group to group or whether it consistently resides in the same person. Is a leader always a leader, or does a new leader arise out of each social situation? Research indicates that leadership is both situational and consistent. Certain individuals tend to act as leaders in whatever group situation they find themselves. Even their consistent leadership, however, has to be modified in terms of the needs of the group in which they find themselves, and other members may also arise as leaders.

These studies indicate that the basic dimensions of leadership have probably not yet been clearly revealed by studies and that leadership is a complex pattern of characteristics which may shift slightly from one situation to another.

Leadership is sometimes mistakenly equated with *headship*, with being the chairman of the homeroom, chairman of a committee, captain of a team, or president of a student council. These are headship positions in a group. They represent formal leadership positions. However, the less formal and tangible aspects of leadership behavior often go unrecognized. The person who pep's up the group, the one who relieves tension with humor, the one who encourages shy members to participate is performing important leadership functions.

In this connection, it is wise for a teacher to make the distinction between *emergent* leadership and *appointed* leadership. Appointed leadership is closely allied to headship. It is found in the person who makes public appearances, who is popular, or who is the formal leader. Emergent leadership usually arises spontaneously from informal classes or groups where leadership roles are distributed among all the students rather than being centralized in the teacher or head. Teachers may overlook emergent leaders among students when they think only in terms of formal, appointed leadership.

Leadership is not necessarily centered in one person. It may be distributed among several persons. A group usually distributes its formal leadership functions among several positions such as presidency, vice-presidency, secretaryship, and the like. In informal groups, the leadership may change hands from time to time depending on who is most adequately furthering the interests of the group. One child may suggest a game of soccer, another furnish the ball, still another direct the team. Each plays a leadership role in his time.

It is misleading to talk about leadership in the abstract without relating it to groups. Groups serve the purpose of fulfilling some of the basic emotional needs in people's lives, such as their need for recognition, security, or giving and receiving affection. Where but in a group can one best receive recognition for achievement, for having abilities, for being a person of worth? Unless children belong to a group, some of their basic social and emotional needs are likely to remain unfulfilled. When a team claps a boy on the back for hitting a home run, the boy is having basic needs met.

A second important function served by groups is to provide the vehicle for social problem-solving. It is through groups that much of society's institutional work is accomplished. Committees, action groups, decision-making groups, and policy-making boards have as their purpose to accomplish some task given to them from some larger group or society as a whole.

We have thus far distinguished two major dimensions of group life and of leadership roles that can now be clarified further. The first of these is represented by the objective purpose for which the group was formed and may be called the *task* dimension. It is what the group sets out to do: to produce some change, or to solve some problem. The second dimension may be called the *socioemotional* dimension. This dimension of group life has to do with the internal social and emotional problems that arise when groups of people live and work together. In the process of accomplishing some purpose, or solving some problem, a group generates friction within itself in the form of emotional tensions and frustrations which have to be dissipated in order for the members to get the job done and to derive satisfactions from working together. Thus, a certain amount of energy of the group has to be expended on maintaining its own social and emotional balance.

The task dimension and the socioemotional dimension of the group are also reflected in leadership behavior. A "task leader" must be a person who can influence the group to work on its objective task. The "socioemotional leader" helps the group continuously to solve its social emotional problems and obtain emotional satisfaction and rewards for the members. Task and socioemotional leadership may reside in one person or may be distributed among two or more members.

Suppose, for example, a committee is constituted to plan a classroom Christmas party. Any suggestions or ideas that members have to help the committee formulate its plan may be called task suggestions. The persons who make such suggestions provide task leadership, since they help the committee accomplish its purpose. In the process of accomplishing its task, however, the members of the committee may generate both positive and negative feelings. They may become frustrated by difficulties and by

what appears to be stubbornness or stupidity in other committee members. They become elated with success and perturbed with failure. Any suggestions or ideas that relieve tensions and increase good will may be called socioemotional ideas and the person who helps the group work well together in spite of emotional upsets may be called the socioemotional leader.

Basic Factors of Leadership.—Carter discovered that there are only three major facets to leadership behavior despite the fact that many researchers use a multitude of terms to describe leadership.³ For instance, a researcher may describe as many as twelve or more ways in which leadership is displayed in a group. Each of the twelve may be logically different from the rest. When Carter subjected these logically different dimensions to factor analysis, however, he discovered that they could be subsumed under three over-all headings.

1. Personal initiative and eminence. Leaders have some outstanding traits or combination of traits that set them apart from the rest of the group. Different leaders may have different traits, but having outstanding traits of some kind appears to be important.

2. Group-goal directedness. Leaders help the group achieve its goals. This is the task dimension of leadership.

3. Social orientation. Leaders pay attention to the social and emotional problems of the group. This is the socioemotional dimension of leadership.

The studies used in Carter's analysis were studies of adult leaders and groups. These same factors are evident in a study, reported below, of the reasons students gave for the leadership choices they made.

Qualities of Student Leaders.—Seven hundred and fifty pupils from grades six, seven, and eight, nominated leaders and gave reasons for their choices in a study conducted by Chambers.⁴ The reasons given were grouped into four categories: (a) mental

³Launor F. Carter, "Evaluating the Performance of Individuals as Members of Small Groups," *Journal of Applied Research*, VII (1954), 477-84.

⁴Isabelle M. Chambers, "Elementary Children's Conception of Social Leadership," *The Gifted Child in Portland: A Report of Five Years of Experience in Developing a Program for Children of Exceptional Endowment* (Portland, Ore.: Portland Public Schools, 1959), pp. 117-18.

ability and effort, (b) personal characteristics, (c) social ability and activities, and (d) appearance. Mental ability is probably related to task leadership; likableness and sociability, to the socio-emotional dimension; and personal appearance, to outstanding traits.

Sixth-grade pupils more often gave mental ability and effort as reasons for picking their leaders. Seventh-grade pupils rated mental ability and personal qualities about evenly. Eighth-grade pupils placed much more emphasis on personal qualities, especially "consideration for others," than on intelligence. An analysis of the intellectual level of the leaders at each of the three grade levels showed a gradual decrease in the average mental ability of the leaders the students chose from grade to grade.

The category called "Social Ability and Activities" was third in number of times mentioned by all groups. The fourth category, "Appearance," was negligible as a reason for selecting leaders.

The shift in emphasis from "mental ability and effort" as a quality desirable in leaders among older elementary school pupils to "personal characteristics" may be a typical developmental trend.

THE PROCESS OF LEADERSHIP IN SOCIAL PROBLEM-SOLVING

It is sometimes asked whether the lone research worker or philosopher in his ivory tower is not at least as great a leader as the politician even though the former thinkers may be unknown to the masses of people whom they influence. In order to do full justice to the nature of leadership it must be related to the larger historical process of problem-solving of which it is a part. Four stages of social problem-solving will be outlined and the nature of the leadership requirements in each stage will be indicated.

In the first stage of social problem-solving, individual creative thinking is required. As Sinnott puts it, "Frequently human advancement has been stalled because something essential for the development was missing. Sooner or later there was born in someone's mind a new idea which supplied the necessary ele-

ment."⁵ Production of such creative ideas is a form of task leadership which is of utmost importance for the future of society.

In the second stage, the emphasis falls on expanding and communicating the idea. Wide dissemination of the creative ideas is needed. This is accomplished through writing, speaking, and even artwork. The leader in this stage is not necessarily the leader in the first stage but is one who possesses communication skills.

In the third stage, translating the idea into action becomes important. The need is for activating leaders who can organize available resources, and can co-ordinate groups of individuals to act upon the idea that originated in the first phase.

In the fourth phase, the original idea along with the products of the second and third phases are institutionalized and become a more-or-less permanent part of the community. Books are placed in libraries, committees are changed into permanent policy-making boards, and so forth. Leadership, too, is institutionalized in the form of elective and appointive positions.

Leadership as found in the third and fourth stages is most commonly recognized as leadership. It fits our stereotype of leadership. The kinds of leadership found in the first two stages should also be recognized as leadership and included in the overall concept of leadership behavior and social problem-solving.

The four phases of social problem-solving are not neatly circumscribed, discrete stages. They overlap and run through each other. The second and third often occur together. All four of them do not necessarily occur in every social movement. They are interdependent in that they feed back to each other. The fourth stage, for instance, is one of the most generative sources of ideas. The problems and deficiencies connected with our social institutions stimulate creative thinking that sets in motion new cycles of social problem-solving. In fact, any one of the four stages may be the starting point for creative thinking that initiates a new cycle.

The rise of interest in educating gifted children in the 1950's serves as an example of how the cycle of social problem-solving

⁵ Edmund W. Sinnott, "The Creativeness of Life," *Creativity and Its Cultivation*, edited by Harold H. Anderson (New York: Harper & Bros., 1959), p. 22.

operates. Interest in the problem rose out of dissatisfactions with efforts of educational institutions for the gifted and out of needs for highly trained young people to fill positions in an expanding economy. Those who sensed this problem and voiced their ideas about it were leaders in the first stage. Those who stumped the country talking to educators, wrote articles and books, and did research were leaders in the second phase. In the third phase activating leaders organized groups of educators, initiated projects, raised money, and approved legislation to do something about the problem. In the fourth phase, the procedures are being institutionalized to some extent in educational policies, teachers' training courses, and publications of many kinds. Projects that started as pilot projects have in some cases become permanent installations and provide institutional positions of leadership where none existed before.

TRAINING FOR LEADERSHIP

Training children to become leaders in adult society presents peculiar problems to the educator. The academic program of the schools encourages individual effort and achievement and is probably best designed to produce leaders of the kind needed in the first phase, and to some extent in the second phase of the leadership cycle.

In the extracurricular activities and athletic programs of the school, leadership is developed for the third stage and to some degree for the fourth stage. In these activities more than in the classroom, children actually practice leadership roles in face-to-face groups and see them demonstrated in their peer culture as well as in the adult-oriented world. Roskens shows that leadership in the adult world can be more accurately predicted from the participation of a college student in non-academic organizations in college than from his academic work.⁸

There is, perhaps, little that the schools can do directly to train pupils for top roles in institutional leadership. Institutional leaders are, on the average, much older than leaders in fields

⁸Ronald W. Roskens, "Relationship between Leadership Participation in College and after College," *Personnel and Guidance Journal*, XXXIX (October, 1960), 110-14.

requiring individual creative thinking, such as in science and mathematics. If Lehman's analysis is correct,⁷ those who hold public offices, such as presidents of colleges, senators, justices of the Supreme Court and the like, all average above fifty years of age. Men who made their most outstanding contribution in physical sciences, mathematics, and biological sciences on the other hand were in their late twenties and early thirties. Thus, much of the training for institutional and public life is obtained after formal schooling. Hence, the academic program of the school seems to be better suited for training for the first phase than for institutional leadership.

There is much that the school can do to promote attitudes that will encourage participation in group life.

Passow emphasizes the necessity of having students actively participate in community life.⁸

The experience of the Citizenship Education project of Teacher's College indicates that students who participate actively in the political life of a community develop more positive attitudes toward civic affairs in service. We can make some time available for enrichment of community experiences because gifted students do not need as much drill and routine—in fact, they react negatively to the excess drill. With time to spare we can, for example, introduce gifted students to the skills of negotiating and compromise which are so essential in our divided world.

Similarly, we can make opportunities available in the school setting for the development of the kinds of feelings and motivation which will turn the talented youth's efforts to constructive channels. We must consciously and continuously provide experiences which stress the responsibility for using one's talents for the benefits of society as well as self.

One of the major difficulties in educating children for social leadership is the deficiency of analytic concepts of leadership and methods of teaching it. Leadership has not been conceptualized to the point where it can be discussed and analyzed except in rather vague, superficial terms. Everyone seems to have his own idea of what leadership consists and these ideas are often

⁷ Harvey C. Lehman, "Summary and Interpretation," *Age and Achievement* (Princeton, N.J.: Princeton University Press, 1953).

⁸ A. Harry Passow, "Talented Youth," p. 162.

contradictory. As a result of our general inability to conceptualize and analyze leadership, children learn to become leaders by the process of trial and error. They practice their leadership skills directly in their clubs, on the athletic field, and in their informal groups. There is little, if any, follow-up discussion of their leadership attempts to enable them to analyze and improve their skills. The situation is somewhat like trying to teach chemistry in the laboratory without lecture and discussion periods.

Another difficulty is that leadership is a personal skill in many respects. It is closely entwined with one's interpersonal relationships, social status, and ambitions. Discussing a pupil's leadership talent can be threatening to his ego. It takes a sensitive teacher to talk about leadership without causing undue emotional stress on the pupil.

Some novel approaches called "management games" and "political gaming" developed at RAND Corporation may lead eventually to the development of classroom methods for teaching leadership skills. The new approaches provide miniature political or social situations in which the participants take the role of political leaders or managerial personnel. They make policies, carry out decisions, and analyze the probable consequences of their action. It may eventually be possible to use the technique as laboratory experience to supplement the social studies classroom work.

Although the personality characteristics of leaders are not clearly outlined by research, a teacher cannot go wrong in helping children to develop their most outstanding traits as a step in the direction of leadership training. They should be encouraged to be productive and active. Sheer output of ideas, plans, and suggestions contribute to leadership. A sense of responsibility is something that teachers can discuss with children. Enthusiasm, the desire to like and to be liked, and the desire to be helpful in a group situation are personal attributes that are an asset to any child who has leadership potential.

A series of class discussions can be planned around leadership topics.⁹ Discussion of leadership might be stimulated by asking

⁹The questions are adapted from Robert F. DeHaan and Jack Kough, "Helping Children with Special Needs," *Teacher's Guidance Handbook* (Elementary School Edition, Chicago: Science Research Associates, 1956), II, 54.

the pupils questions such as the following: What is a good leader? What skills does he need? What attitudes does he need about working together? Do different situations require different types of leaders? What is a good group member? How can one become a more responsible group member? What leadership positions are there in the community, nation, and world? Who holds such leadership positions? What do they do as leaders? What leadership opportunity is there for us in our class?

In answering the last question, a teacher might possibly point out the value of learning how to make a formal presentation, of learning how to conduct meetings by parliamentary procedures, of developing sensitivity to individuals and group needs, of being concerned for individuals in the group, of respect for the majority. These can be actively taught in the process of setting up the class organization.

THE ARTS IN SOCIETY

Art, unlike science, is non-functional in the sense that it does not increase knowledge or raise the material standard of living. Rather, its function is to mirror man to himself, to show what is going on beneath the surface of his life. Art not only mirrors man, but also serves as a pointer to the heights to which he should be aspiring. The United Nations building has been pointed out as an example of art in architecture that mirrors man's hopes and faith in the future and symbolizes the aspirations for a unified world.¹⁰

Art captures man's experience.—In discussing why she liked to draw, a young girl said, "When I draw flowers, I always have them there. They never wilt away." She had hold of a truth about art. With it a child can express his experience, and it will always be there.

Art is a means of expressing truth. Unlike science, the truth it expresses is non-propositional truth, but is truth nonetheless. A poem about a sea gull can tell as much that is true about the gull as a scientific description of the bird. Art expresses truth that communicates directly with the whole of man and shows

¹⁰ Irving Kriesberg, "Art in Adult Life," *Adult Leadership*, December, 1955, p. 6.

a different perspective on life from the abstract, propositional approach of science and philosophy.

Art brings simple elemental enjoyment to its practitioners at any age level and any walk of life. Surely society would be vitiated if its artistic heritage and practice were to be submerged under the demands and products of science and technology.

One complaint of mature scientists is that their newly trained colleagues are often good technicians but poor creators. It is possible that students could be trained to be more creatively scientific if they also had the experience of creating artistically. Just as the humanities are needed to prevent the scientist from becoming too narrow a specialist, so the arts can probably help him to be creative in his scientific, or any other, endeavor he may undertake.

DEVELOPING ARTISTIC TALENT

The various kinds of artistic talent to be discussed in this section are graphic and plastic arts, craft skills, creative writing, dramatic ability, musical talent, dancing ability.¹¹

In general, it is necessary to provide some form of special grouping, at least on a part-time basis in order to do full justice to the development of talents in the arts. Fortunately, they are generally considered special interests and the establishment of such interest groups does not arouse as much criticism as special groups in academic areas do.

Graphic and plastic arts.—Many experiences lend themselves to artistic expression. Children can be encouraged to think of what has been happening to them, of experiences they had while walking to school, of what happened during their play periods, or things they did during vacation as being possible to draw or paint.

Artistic production does not have to be a mammoth affair requiring long preparation and the gathering of much material. It can take place spontaneously and should be easy to do. Teachers can encourage children to make quick sketches of things they see or hear. Children can also keep an art diary, draw their

¹¹ Adapted from Robert F. DeHaan and Jack Kough, "Helping Children," II, 60-109.

impressions while they are listening to music, illustrate a story they may be reading, make quick sketches of their classmates.

In general, teachers should differentiate between two sources of artistic inspiration. The first comes from within the child; the other from outside himself, from what he sees or hears in the outside world. Of course, these two are never completely separated but some children tend to rely more on one source of inspiration than the other. Children can be encouraged to discuss the process of translating inner experience and impressions into an art product. Teachers can show them how different colors depict different moods. A yellow spot on a piece of paper may call forth feelings that are quite different from a red spot. A bold, harsh line on the chalkboard or with a piece of charcoal can be compared with a timid, hesitating line. Teachers can ask pupils to look at various pieces of artwork and tell them how the pictures make them feel. They can encourage children to experiment with different effects of color, texture, and media.

If pupils are oriented toward the outside world for their inspiration, teachers should help them to sharpen their observation of the world. Things look different in different places. Shadows on the snow look different from shadows cast on a rough, wooden surface. What are the significant details that should be included in a drawing or painting? What is the feeling or mood of the scene or object which they wish to depict. One of the real values of art training is that it opens the eyes of the student to the world around him.

One barrier to artistic production in children is set up by adults who impose their own art standards upon children. For example, a young child will not hesitate to draw an arm clear to the top of an apple tree to reach an apple if reaching the apple is important to the child. Some adults mistakenly reject such art because it is not in "proper" proportion. Encourage children to be free with their ideas. It is necessary to surround them with an atmosphere that is free from the fear of failure. Since art is such a personal experience, any critical rejection of the art product is likely to be taken by the child artist as a rejection of himself. Pupils need strong support in their artistic

activities particularly in the early stages of development; the adult should be generous, but judicious, with his praise.

Children should be helped to develop techniques when they begin to be dissatisfied with their work and ask for help. Techniques, however, should always be subordinate to the free expression of the young artist's sensations and feelings.

Art can be a social as well as an individual experience. Murals or dioramas provide an opportunity for several children to participate. Models of such things as an oil well or a cross-section of a volcano also lend themselves to group participation. This is good not only for the general social education of a child but also provides opportunities for children to learn techniques from each other. A collection of reproductions of masterpieces should be readily available to the children, as well as biographies of the artists who painted them. The collection can be gathered over a period of years, and while it is being assembled it can serve to stimulate children who love art.

Teachers can encourage artistically able children simply by having a good supply of basic materials on hand: crayons, paper, paints, clay. Scrap materials, too, will stimulate creative children to experiment with various kinds of artistic expression.

It is encouraging and delightful for children to exchange artwork with children from other schools or even from foreign lands. Such exchanges encourage understanding of children from other communities as well as encouraging artistic productivity.

Teachers should discuss with parents the artistic ability that their child displays. In many cases, parents will supply art materials in the home if they are encouraged to do so. If a teacher is really concerned about the artistic development of the children, he can set up an art club in school to meet after school hours, or even during school time if policy permits it. If no one on the faculty is qualified to direct the club, parents or a member of the community might be encouraged to do so.

Craft skills.—Closely allied to talent in the graphic and plastic arts is craftsmanship or mechanical talent. It is the ability to understand, operate, perfect, and invent mechanical equipment and to construct objects. This talent has its intellectual components; it is probably allied to scientific ability as well. From

students with these abilities may come some of our future inventors and builders. Manual experience for students having such talents can also be an important adjunct to their general education.

Craft skills can be used for testing ideas. For example, a person with mechanical skills is in much better position to test out a theory of aerodynamics than one who can only theorize about it. He might construct various shapes with which to test wind flow, perhaps even make a wind tunnel for his experiments.

Craftsmanship is an important value to be taught to all children and is undoubtedly best taught with tangible products. Quality and excellence can be demonstrated with projects made by students during craft periods.

Woodworking and metalworking shops should be considered part of the laboratory setup in the schools and located near the science labs. If students could make a special piece of equipment as it was needed, this would encourage the kind of ingenuity that a scientist needs in making equipment and instruments for his work.

Creative writing talent.—It is important to distinguish between creative and practical writing. Practical or applied writing serves the immediate purposes of everyday life. In teaching applied writing, emphasis should be placed on correct form. Such writing should be clear, to the point, utilitarian. Business letters, minutes of meetings, and research reports fall into this category.

Creative writing is done for the enjoyment and satisfaction it gives the writer and those who read or hear it. Emphasis should be placed upon communicating feelings, impressions, and moods. Poems, essays, and stories are examples of creative writing.

The process of creative writing should be broken down into at least two stages. The first stage is the creative stage. Being creative is demanding; it absorbs all the child's energies. All external barriers should be removed so that the student can feel free to express himself. The second stage is the critical stage. In it the writer should act as editor to his first copy. The student must pay attention to the form of his writing and to the grammar, punctuation, and spelling.

One of the greatest barriers to creative writing is premature

criticism. In the creative stage, critical judgment should be suspended, or it may stop the creative flow. The fresh onrush of ideas should be jotted down, the main ideas sketched out, and little attention paid to form. After the writer has reached closure on his creative effort, he can criticize it and shape it to its polished form.

Teachers can stimulate creative writing by collecting, over a period of years, the poems and stories of children in the class. Their work can be used to stimulate children who follow, especially by reading aloud from the collection.

Children often need encouragement even to start, and it takes an alert teacher to know how and when to interfere. One first-grade teacher noticed that a shy little girl was spending her time in the reading circle, drawing faces on a number of wooden ice-cream cup spoons she had in her possession. After the reading period was finished, the teacher asked the girl what she had been doing with the spoons. She discovered that the girl was creating characters that were to be included in the little play she was writing. Because of her shyness, the girl hardly dared to talk about her play. With encouragement from the teacher, however, she did and eventually finished it and wrote a number of other plays for the class to produce. It took an alert teacher, however, to motivate her.

Invite children to write in their spare time. Make writing easy for them. Teach them to "sketch," in the process of writing, the way an artist makes a preliminary sketch for a painting. Let them write about their own topics in their own time as well as assigned topics.

Characters usually make a better starting point for writing than do events. Young children, in particular, love animal characters, animated machines, and fantasy characters. They like to poke fun at adults by means of animal antics.

Children can be encouraged to share their writing with others. Some teachers have setup a creative writing hour in which those students interested in writing can join her and share their work while the rest of the class is occupied with other work. Criticizing and commenting on each other's work while the rest of the class carries on other projects. A good critical question to ask a

young writer is, "What do you really want to say?" Pick up what is written particularly well, and dwell on it. Encourage children to read widely. Children can share the books they love to read. Creative writing clubs are also an excellent idea. If they cannot be held in school, it is possible that the community library might be encouraged to sponsor such clubs.

Photographs and sketches can be used to stimulate writing. Music, too, can be used in much the same way. Create characters and plots to accompany social study units. One teacher with his pupils created a family of clowns that toured the U.S. in the social studies. Each city and section of the country was visited by the clowns and stories and plays written were written about their adventures. Give leadoff sentences from which pupils can develop stories. Read an interesting story and stop short of the climax and let the children finish it.

Children should be encouraged to submit their poems and stories for publication as early as possible. Children's magazines are often on the lookout for good writing by children. Surely by the time the talented writer is finished with high school he should have experienced having submitted his work for publication.

Dramatic talent.—In creative dramatics, the children act out their own parts spontaneously, using their own words, any kind of plot can be used—a real life situation, a familiar story, a fairy tale. Stories that children themselves write are often suitable for plots. There is no script. The primary benefit is for the actors, not the audience.

Theatrical dramatics, on the other hand, is the traditional play, with a written script, a cast of characters, and more or less elaborate staging.

A good place to start in the training of dramatic talent is with pantomiming. Youngsters can pantomime picking flowers, teaching a friend to play tennis, or bringing home a bad report card. Later, pantomiming emotions and changes in emotions can be tried. Adding dialogue to the action, understanding the central ideas to be portrayed, evaluating one's performance can come still later. Acting can be done in the regular classroom if the teacher has the initiative to launch it. Role-playing is used in

leadership training and human relations training in industry and among social relations groups; there is no better way to teach one person how another person feels than to let him act the role of that person.

The teacher can refer any gifted actor to the community theater or children's theater if there is one. He should confer with parents about their child's ability. Children with dramatic ability and interest should be guided into classes on dramatics, stage craft or costuming.

Musical and dancing talent.—Many schools have facilities to develop children's musical talent. Instrumental music instruction often begins in the fourth grade, and serious choral work is undertaken in high school. The community generally supports the school's musical program because the music pays dividends to the community in terms of concerts, parades, and musical events during interscholastic athletics.

Planning and giving classroom programs is a good way to stimulate the pupil's interest in music. Listening to records and going to musical concerts, operas, and other musical events enhance the role of music in the lives of children. Other suggestions include making musical instruments, studying the scientific aspects of music and musical instruments, meeting with talented musicians from a nearby college or of the local orchestra.

One of the more neglected aspects of most student's musical training is in the composition of music. There is no reason why creative children allowed to learn to write music much as an artistically talented student is allowed to learn to paint. Some help will need to be given in some of the technical aspects of composition.

Music and dancing naturally go together and are activities to which everyone is exposed in one form or another at some time. For young children, dancing is intermixed with running, swimming, leaping, and whirling. It is an easy step to increase their repertoire of expressive movements by encouraging creative aspects of dancing.

There are a variety of dances: ballet, square dance, folk dancing, contemporary dance, and creative dancing. For adolescence, dancing serves another purpose from expression. It be-

comes a medium of socialization through which boys and girls become better acquainted with each other. Social dancing becomes an important institution among adolescents.

In the classroom, dancing can be taught in connection with music, creative writing, and acting. Children can imitate any natural rhythmic movement such as the falling of a leaf, the rising of smoke, or a cloud drifting in the sky. Children can be asked to pay attention to rhythms they can hear: a drum beat, the rise and fall of the wind, the roll of waves, the clapping of hands. They can be asked to accompany these rhythms or to imitate them with body motion.

The more technical aspects of dancing can best be left to the physical education instructor, or a private dance teacher if the parents wish their children to have lessons.

QUESTIONS FOR STUDY AND DISCUSSION

1. What is the importance to society of the non-academic talents?
2. To what extent should schools take responsibility for developing non-academic talents?
3. Discuss some of the difficulties of studying leadership objectively.
4. How can leadership training be emphasized in schools?
5. What is the role of the teacher and the principal in the training of those pupils who have leadership abilities?
6. What attitudes and qualities of character should potential leaders have?
7. What abilities will future leaders need in view of the unpredictability of the future?
8. Discuss the role of the arts as a mirror and as a pointer.
9. Using the four stages of social problem-solving, show how the idea of a community's need for art can be translated into action and finally institutionalized.
10. What role did the arts play in the Demonstration Guidance Project described in chapter vi?

Teaching Gifted Children in the Regular Classroom

This chapter is written to the teacher who has one or two outstanding children in a room of thirty more or less average children; who is concerned and would like to do something for those one or two gifted children; who perhaps hesitates to try out the new, unexplored kind of classroom teaching that he may suspect is involved in teaching such youngsters. It will emphasize the things that can be done by combining enrichment, grouping, and acceleration within the regular classroom, the place where most of the gifted children still get their education.

THE TEACHER'S ATTITUDE

Teachers vary a great deal in their attitudes toward gifted children. Some teachers ignore high-ability children and teach them as if they were average. Others recognize them but confess they can do nothing to help them because of other overriding demands in the classroom, such as discipline problems and slow learners. Still other teachers seem to be concerned only with the slow learners and to concentrate all their teaching on them.

The teacher's attitude toward the education of gifted children is crucial. He will be able to help them if he is sensitive to their needs and willing to make changes in himself if necessary, in

order to give them what they need. One teacher said, "When I am finished with my class in June, the slow children are a little faster, and the fast have slowed down a little." A teacher who boasts of such an approach can be of little help to gifted children.

The more effectively the teacher copes with the usual problems of the average classroom, the more effective will be his work with gifted children. If he is not frustrated by the maladjusted child, if discipline is not a serious problem to him, if the slow learner is not his chief concern, he will have time and energy to carry on work with the gifted.

THE TEACHER'S JUDGMENT

A teacher can reasonably be expected to know who the gifted children are in the classroom and in what areas they are gifted. An observant teacher should know this within the first six to eight weeks of school. Intelligence tests, observational procedures, and other screening devices can help him discover them. (These procedures were discussed in chapter iii). A teacher should have objectives in mind for the gifted children and be able to devise learning experiences to attain the objectives.

The teacher can also judge his handling of the bright children by asking himself what he gives children to do when they have completed their assignments. If he gives them only more of the same kind of problems or perhaps somewhat more difficult ones than he gives the other children, he can question the adequacy of his program for bright children. In one day, for instance, four bright seventh-grade boys were each required to do 139 arithmetic problems. The other children did only 20. Such practices certainly do not challenge the gifted children.

If the teacher simply permits the gifted children to do whatever they want, so long as they are quiet while he helps the other children, he should be dissatisfied, too. Such practice gave a sixth-grade girl with a brilliant memory a chance to read unobtrusively every movie magazine she could find on the newsstand. But she was not challenged to exercise her mental energies on anything more enlightening or beneficial.

PHYSICAL ARRANGEMENTS IN THE CLASSROOM

One key to success in teaching gifted children in the classroom is flexibility. When the teacher arranges his room to provide a flexible physical environment for his pupils, he is well on the way toward helping the gifted.

Desks and chairs.—There was a day when educators thought it was a good idea for the desks and chairs to be fastened to the floor in long rows. Such a practice is the extreme of rigid physical arrangement. Today most teachers have movable desks and chairs that allow for flexibility in seating the pupils. Some teachers have discarded even movable desks in favor of tables seating four students.

A teacher may hesitate, however, to exploit the flexibility of movable desks and chairs, fearing the class would soon get out of hand and reflect upon his ability to "keep order." This attitude limits the opportunities to help gifted children, since a flexible room-arrangement is one of the conditions which enhance effective teaching for gifted children.

Many teachers are discovering the value of having at least one large table in the room where committee or informal groups of children can work. The table is not placed at the back of the room, nor is it stacked high with books and materials, leaving no work space. Rather, it is placed in the front of the room, where the children want to work. It is not a punishment to work at the table. One teacher called it her "prestige table." Children who need to work together sit there.

A table often does wonders for slow learners and emotionally disturbed children as well. The table itself pulls them together into a group, making them feel more secure. But at the same time it keeps them apart far enough to prevent their fighting or annoying each other.

Work Centers.—Many teachers set up work centers for projects or creative activities for their pupils. A work center is a corner of the room, a table, a bookcase, or a set of shelves set up so that children have a designated place to work on a project that is of interest to them.

Each center has space for working as well as storing necessary

materials and tools. A center for creative activity should contain materials such as clay, paste, scissors, paints, and paper. If there is enough room, materials for weaving, for metalwork, and for woodwork can be added. Finger-painting materials, crayons, and chalk should also be on hand. A piece of linoleum on the floor will save the teacher many a headache in keeping the floor clean.

A science corner is another type of work center. Such a center may contain such things as a magnet with iron filings and other metals and non-metals for experiments with magnetism; dry-cell batteries with wire and light-bulb sockets and lights for experiments with electricity; a Bunsen burner or an alcohol burner, a magnifying glass, a microscope. Materials that the children bring in will add to their interest in the science center.

Another center might be set up for creative music. It could contain chimes rhythm-band instruments, a record player, records, and books about great composers and compositions and music composition paper. These may encourage children to experiment in composing their own music.

In still another center there might be a typewriter. This could be either a creative-writing center or a newspaper center. In such a center the children could turn out a newspaper which could be mimeographed or placed on the bulletin board.

A center for creative dramatics could be set up consisting of a large cardboard carton for the stage and puppets or marionettes for the characters. Hand puppets are very popular with children. The stage can be decorated with an old curtain, unbleached muslin, or crepe paper.

Many classrooms are almost too crowded for a work center. Even in spacious classrooms the teacher's ingenuity must be exercised in creating a work center and in maintaining the interest of the children in it. Centers may be as simple as orange crates with a board placed over them or as complicated as formica-covered shelves with a sink, electrical and gas outlets, and cupboards for storing supplies.

When tools are not supplied by the school, the teacher and the pupils can use their own ingenuity to create them. For example, toothpicks make excellent tools for working with clay. A coat

hanger will find a thousand uses in the hands of a creative teacher.

In some classrooms, portable equipment is used for materials and the children work at their own desks. A serving cart can contain materials for painting. In some classes the materials are stored outside of the classroom, and the work is done on hinged counters or shelves. Paper cartons can be used for carrying and storing art and science materials.

Classroom library.—Gifted children will have odds and ends of time left over from their regular work. Because of this they should have books at their finger tips so that they do not waste spare moments in the process of obtaining the books. For this reason a library in the classroom is desirable. Or, if this is impossible, children should be permitted to keep books from the central school library in their desks for a week or so at a time.

Room libraries should have advanced books as well as those for the average reading ability of the class. Too often, library books are purchased with only one thought in mind; to try to interest the slow learner in reading. One elementary school, on the other hand, made a special purchase of twenty books on science ranging in difficulty and interest from kindergarten to the last year in high school. There was a book for every mental age and kind of interest.

In some schools, a card index of all the books in every classroom library has been made. Each room was given a copy of the index. Every book in the school was available to the children on a loan basis. If, for example, a fourth-grade youngster wanted a book of literature at the sixth-grade level, he was allowed to borrow it. A few words of caution are necessary. Even gifted children should not be permitted to read the regular textbooks of an advanced grade. They should demonstrate their ability to read advanced books either through reading-achievement test scores or by reporting to the teacher or the whole class on one or more of the books they read.

Each year approximately 15 to 25 per cent of the library budget should be devoted to advanced books. If the library budget is so small that it does not cover even the basic books, the

teacher may be able to turn to the P.T.A. or to the parents of gifted children for help. They often have books of interest they would gladly donate to the library for the benefit of gifted children. One fifth-grade youngster suggested that the class set up a sharing library by each bringing in one of his favorite books from home. Such a procedure should help children establish sharing as a personal value. In large cities, a teacher can often by good secondhand books for very little if she is alert to sales in bookstores.

Gifted children are interested in books of poetry, biography, and autobiography of famous persons, books on travel, mathematics, art, and popularized science, and puzzles. Each room should have a good dictionary and a standard encyclopedia. In selecting books for her room, a teacher will find gifted children themselves helpful, and the public librarian is always willing to be of service if the teacher will take the time to consult her. The children themselves can contribute to the classroom library over a period of years by donating scrapbooks, project books, classroom newspapers, or volumes of their own creative writing. A section of the library should be set up for this purpose.

Materials.—If the teacher begins to concentrate on stepping up the educational offerings for his superior pupils, he will unquestionably use more materials than he has before. In the matter of art alone, he will find himself requisitioning more paper, paints, chalk, and crayons. In social studies he will find the children wanting maps, pamphlets, and books. This is as it should be. Furthermore, it is a rare administrator who is not glad to supply the materials the teacher needs. All the teacher needs to do is to describe how he will use them, and he can undoubtedly obtain them.

"Throw-out" materials, things headed for the junk pile, are available to any alert teacher. Scraps of wire, paper cartons, old magazines, pieces of wood, worn-out cookery utensils are available to the teacher who keeps his eyes open for them. An old scrap of wood served one teacher for making an all-over block print for designing wrapping paper. A long piece of copper wire in the hands of a clever boy was turned into a most interesting mobile.

Enrichment packages.—The teacher can also provide the child with “packages” of enrichment materials. Mrs. Jackson, a third-grade teacher, for example, made a file box out of an old orange crate. She then obtained two dozen large manila envelopes from the principal’s office. In each envelope she placed an assortment of interesting puzzles of many kinds, bits of poetry, stories, pictures, and problems that she had accumulated over a period of years. As soon as any child finished a particular assignment, he could take one of the envelopes to his desk and work through it. Children were required to work through the envelopes in serial order which were graded according to the difficulty of the contents.

This above procedure illustrates something which every teacher can do over a period of time: *accumulate interesting enrichment material for gifted children*. Any teacher can start an enrichment folder and in the space of one year have gathered a wealth of material with which to stimulate gifted children. The teacher described above took the next step by organizing such material so that it fitted neatly into the curriculum and her style of teaching.

Miscellaneous physical arrangements.—Many teachers keep a file of pictures, display material, and other enrichment materials. They encourage children to bring in materials themselves for display. Such displays are even more effective when correlated with the curriculum and planned and executed by the youngsters themselves. The value of a picture displayed and discussed is multiplied over the value of one that is displayed only.

The physical arrangements in the classroom reflect the attitude of the teacher toward individual differences in his pupils. If he is intent on developing the uniqueness of each child, he will use flexible rather than rigid arrangements that require every child to fit a common mold of working experience.

ORGANIZATION OF TEACHABLE GROUPS

Children in a classroom are probably most similar in the least important characteristic—their physical age, probably within one year of each other in chronological age. In mental age, however, they may differ from four to six years. In academic

achievement, they are likely to present a similar discrepancy. As children move up the academic ladder and as their individuality is encouraged, these differences increase rather than decrease, and classroom management becomes difficult. Some way of maintaining order and yet encouraging individuality must be found.

From the point of view of efficiency alone it is imperative for the teacher to put children together into teachable groups. It is not fair to hold up the rapid learners for the sake of the slow. Neither is it fair to ignore the slow learner for the sake of the rapid ones. One very important advantage of ability grouping is that the bright children are likely to stimulate and educate each other.

Every teacher is familiar with the use of ability grouping in the teaching of reading in the primary grades. This is an accepted procedure. It is a good practice in the upper grades as well, although there it is less often used effectively. For example, in reading or in science, able youngsters in a special group, proceeding at their own pace, will need guidance and suggestions, but they will be able to do a good deal of work on their own while the teacher helps other groups which are working at their own pace.

There is no hard and fast rule to be followed in organizing teachable groups, but there are some important considerations.

Size of ability groups.—The general rule to be followed is that the further toward the extreme ends of the intelligence scale the children are, the greater the need for smaller groups. In practice this rule means that a teacher can more efficiently reach a large group of average-ability children than he can a large group of very superior ones. The superior ones have a greater need for individual attention.

In the classroom the teacher might have three groups: one rather large group including from one-half to three-quarters of the class, a second smaller group of rapid learners, and a third small group of slow learners.

Composition of the ability groups.—Which children are members of the ability groups will vary according to the subject being taught. For example, the children who are in the advanced

group in reading would not necessarily be the same ones in the advanced group in arithmetic.

Duration of ability groups.—Some teachers set up groups on a long-term basis, and others for a much shorter term. Again, it depends on what is being taught. Ability groups in reading and arithmetic could go on all year. Special project groups might last less than one month.

Ability grouping should be distinguished from sociometric grouping, in which the children's choices of group partners is the basis for grouping. Sociometric grouping is important for project and committee work as well as for integrating "problem" children into the group.

It should be stressed that flexible physical arrangements in the classroom contribute to the success of special groupings. The two go hand in hand. The need for grouping and for flexibility increases as the size of the classrooms increases. Unfortunately, as more children pour into the classroom, the tendency is to decrease the freedom and flexibility for children because of the attendant discipline problems. Not only the needs of individual gifted children but also those of the total group must be considered in a realistic program of grouping.

How to group the children according to their ability without making them feel conspicuous is an important problem. This can be done by recognizing and discussing with the children the fact that children (and adults, too) have different rates of learning. The teacher can explain that he is grouping them in order to help them learn at their own rate. This is to the advantage of teacher and children. Honest, forthright recognition of differences in their ability and an explanation of how grouping helps them is understandable and acceptable to children and clears the air of much possible hard feelings and bickering.

Teachers' preferences differ in regard to grouping. Some teachers, for one reason or another, prefer not to use the technique of grouping their teaching. Some prefer to work closely with individual children, stimulating, guiding, and teaching them through personal contact. Others feel particularly close to children whose interests are like their own. Nevertheless, the group

method of teaching is a valuable "tool" and will undoubtedly meet the needs of many children in an efficient, educationally sound way.

Class size.—Classroom teachers sometimes believe that their classes are too large for them to pay attention to the gifted in their room. Class size as such is not the crucial factor, however. Some teachers with a large group of 40 to 45 children have been known to enrich the curriculum more effectively than other teachers with a group of 30. The first teacher probably could have been even more effective with a smaller group, however.

The important thing seems to be the teacher's conviction that it is important for her to extend herself for the gifted in her group and her determination to teach them everything they are willing to learn. Such determination overcomes many obstacles and deficiencies.

ORGANIZATION OF CURRICULAR UNITS

It seems to be true that teaching by means of large units goes hand in hand with individualizing instruction for all children and enriching instruction for the gifted. The reasons for this are clear. Large units usually extend over a long period of time, have a wide scope, and include a large number of activities. They provide many opportunities for the individual child to learn basic skills in a frame of reference that appeals to his interests.

The following example is a case in point. One eighth-grade teacher taught arithmetic in a thirty-five-minute period early in the day. He was teaching ratio and proportion—as both content and skill to be learned. At the end of the period, the children shut off arithmetic and turned on spelling. And so the day went.

The teacher began to ask himself if a number of skills could not be taught as well within a context familiar to the children. He picked family life as something that was close to all pupils and worked out a large unit on the family with the class. From a consideration of the family budget they learned about ratio and proportion. The teacher made the unit still more meaningful by asking the children to look ten years into the future and decide what kind of job, how large a family, and what size income they expected to have. Drill in the academic skills was provided

in certain periods of the day and the children worked on those skills in which they were weakest. None of the traditional content of the subjects was lost and much motivation was gained. An academic process was generalized to a more or less real life situation.

Large units such as this provide uncounted opportunities for children to find their own individual paths of learning. They require a willing, resourceful teacher to carry them out as well as flexible physical arrangements.

Two- and three-track curriculums are common in many high schools, but the idea is adaptable to the elementary school classroom as well. Such curriculums require two and three levels of material as well to be effective. In short, breaking a large group of children into several homogeneous, teachable groups implies several parallel curriculums and several levels of material.

Some teachers have dispensed with a single set of textbooks for their classroom. In its place, they substitute textbooks on three or even more reading levels, thereby helping not only the rapid but also the slow learners. For example, one ninth-grade teacher had his children studying history from books on sixth-grade, ninth-grade, and college levels. Publishers are turning their attention to producing books on more than one reading level, and providing advanced exercises for rapid learners.

Occasionally one hears of a teacher who has tried the idea of ability grouping and found it to fail. The reason is usually that he did not follow through with the required variety of material or some other necessary concomitant arrangement. When a teacher seriously proposes to enrich his educational offerings, he needs to consider the necessity of going all the way. Special grouping, special units, and flexible facilities need to be taken together because they depend on each other to such a great extent.

An alternative to the organization described in the preceding pages is to leave the basic curriculum and teaching procedures untouched and to provide individual enrichment to the gifted youngsters in the class through special projects, a free choice of work to be done in their spare time, or special assignments. The first might be studying and reporting on something related to

classroom work. For example, if the class is studying health, the rapid learner might be asked to make a special project of disease germs, immunization, or famous scientists who have made discoveries that are now used to protect health. The elective work can be something unrelated to schoolwork but growing out of the child's interest. The possibilities are as various as children's interests.

There are two ways of handling enrichment in special areas for the total group. One way is to develop a project or a unit in which all the children can participate and can carry through its first stage, with the talented children carrying it on to its second, more elaborate and advanced stage. For example, in making a mural of Marco Polo's travels across the Gobi Desert the entire group or committee can do the research for the project and make the initial plans for the mural. They can study such things as the problems that he faced on his journey and the type of clothing he wore, the route he followed, important places along the route, and the kinds of animals that he used for transportation. At this point some culminating activity, such as reports or discussion, winds up the total group project.

The gifted children then take the project to its second stage, that of making a mural or a diorama, of making a final evaluation report, or of dramatizing the project. In this way, every child participates in the first stage, and, as the project becomes more complex and specialized, those with special abilities carry it to its final phase. Average children who drop out after the first phase are not made to feel guilty but are given honest recognition for their contribution to the success of the project.

A second way of including the total classroom in one of these special areas is to start with the special projects of the gifted children. For example, gifted children may begin an activity of making scrapbooks during their extra time in connection with some unit in social studies. Or they might be given an assignment of dramatizing certain stories that the class has been reading. From this specialized research and production of the gifted children, the entire class becomes involved in a project. In the second stage, the whole group may produce an assembly pro-

gram based on the earlier work. Or the rest of the children may be encouraged to make scrapbooks of their own.

Most extra work will have to be planned with the gifted child in teacher-child conferences. In such conferences, the teacher can call the pupil's attention to his abilities, to the responsibilities that accompany superior endowment.

Teachers can also evaluate their efforts by asking the parents in conference how their children react to school. If the parents report boredom, the teacher needs to step up his efforts.

USE OF COMMUNITY RESOURCES IN CLASSROOM WORK

The following example shows how one teacher effectively used the community to help enrich the learning experience of a gifted boy when the classroom could not provide what he needed. Miss Ronson, a social studies teacher, had a boy in her class who had never been in a public junior high school before. James was a cripple and had gone to an independent school in a distant city. His parents realized that he needed to learn how to get on better with youngsters his age. Hence, they sent him to a public school in the seventh grade. He was in the upper 1 per cent of the population in intellectual ability.

At first he was frightened, but the girls and boys at his table treated him well. They discovered he had excellent artistic ability. They talked about this ability and interested others in him. Eventually they asked him to be the artist for the junior high school annual.

The students in this class often worked together in groups on projects of their own choice. James, however, was too shy and fearful for this. He decided to work on an individual project instead. So he decided to study the national highway construction problem because it was important in the news at that time.

An office of a large highway engineering company was located in the city. This company was working on projects in several states and had many books on materials, surveys, machinery, and cost estimates. As James began to develop his project of designing a system of highways, the teacher made appointments for him to go to the offices of the engineers and to laboratories. Soon

he was making his own appointments. Sometimes he was gone from her class for as long as two weeks at a time, visiting these offices, making appointments with the engineers, consulting with them, and taking pictures of their models of highways. He learned how to make maps and drawings on sheets of clear plastic that would overlay each other. He compiled data from the maps, describing how various cities and regions would be affected by the highway plan.

When the time came to make his report, he had a table piled with material and notebooks filled with figures and charts. He used an opaque projector to present his material. The report was a masterpiece. Later he made a report to the regional meeting of the engineers of the company where he had obtained so much help.

The significance of this case lies in the tremendous use that was made of engineers in the community to help this boy in his project in social studies. They gave him specialized help he never could have obtained at school. Not every community has such a fortunate combination of specialists for every gifted child. It is a rare community that has none. These can and should be exploited.

GENERATIVE EDUCATIONAL IDEAS

Some ideas take. One hardly needs to drop a hint about them, and the pupils pick them up and run with them. Such ideas may be called "generative ideas" because they generate so much intellectual energy, enthusiasm, and interest on the part of the children.

Other ideas are inert. They never move the children. They enter the mind as water fills a sponge and are squeezed out on the next test. Generative ideas have three characteristics that inert ideas lack; they start with the children's needs; they involve action of some kind; and they lead in understandable, meaningful directions.

Below are some suggested topics which can generate ideas and enrich the learning experience of gifted children.

Biographies.—Gifted children are particularly interested in biographies and autobiographies, because they can so easily

identify psychologically with the great person about whose life they read. The school librarian or the community librarian will be glad to furnish a list of great biographies and autobiographies. Better still, the teacher can ask gifted children what great personages they know about and admire, list the names on the board, and add some suggestions of his own. A class discussion can be based on this question. The gifted children can find out what biographies are available. They can make an annotated reference list for the class. Next the teacher should find out which biography they would like to study further. They may want to read many more than one.

Basic problems of civilization.—A study of the wheel and its importance in transportation throughout the ages will illustrate how the basic problem of transportation was and is being solved. Man's attempts to increase his food supply, to conquer his environment, to develop laws and rules of behavior, are similar topics.

Again, the teacher's approach in presenting these problems is important for generating enthusiasm. Children will be curious if he asks stimulating questions; they will want to learn if the teacher wants to learn, too; they will enjoy it if the teacher is enthusiastic.

The advent of great ideas.—The study of basic discoveries is always fascinating and stimulating. The beginnings of many of our most important institutions and machines are lost in antiquity. But the conditions which gave them birth are available to study or even to wholesome speculation. Where did writing originate? How was the force of gravity discovered? Who found out that the heart pumped blood?

The teacher can easily raise such stimulating questions every day in his classroom. Not all of them will "take." But if he asks enough questions, one will eventually strike a spark with bright youngsters. He then needs only to encourage them, point them to material, and help them organize their studies.

The development of common things.—How did woven cloth develop into the many miracle fabrics we now have? How did the car develop from the horseless carriage, the rocket ship from the first Chinese rocket? How about such things as can openers,

pencils, or fountain pens, the alphabet, the newspaper? Most children have never asked or been asked such questions. In answering them, they will travel many interesting pathways of learning.

Their creative thinking can be stimulated if they are asked how such common articles will look and operate in ten years, or what improvements can be made in them, or what changes would need to be made in our everyday life if we did not have them. For example, if nobody had shoes, what changes would need to be made in our sidewalks, how would feet be protected and kept warm? Each child can be asked to name a new and different use for a key, a coat hanger, or toothpicks. On the surface, this may appear to be child's play. Actually, it is very serious educational business. For dealing with the "impossible" and the different is the task of the creator, the inventor. Making possible the impossible is what has advanced society in the past. Tomorrow, the children now in the classroom will be called upon to continue the advance. Teachers can stimulate them to think new ideas, to stretch their imagination through novel questions about old objects and ideas.

Individual interests.—Gifted children pick up ideas and information as a bee picks up nectar. But they often lack opportunity to follow through and thoroughly develop their ideas. A little time spent with them either in the classroom or in the hallways will reveal things they want to know better. Teachers should capitalize on this interest and motivation to learn.

They are often interested in things that are rather superficial from an educational standpoint. For example, one bright junior high lad wanted to know more about football. This interest needed to be accepted as legitimate and valuable to him. But further questioning revealed that this boy was also interested in aircraft, and he was persuaded to study the development of a United States military plane from the beginning of World War II to the present. He also continued the study of football on a creative basis by designing new offensive and defensive formations; by studying the development of protective gear; and by studying the physical requirements of the various positions on the team.

Imaginative living in another world.—This approach can be a source of unending stimulation for creative youngsters. A new world with special, unusual conditions can be created by them, or conditions in this world can be changed. What changes would have to be made in everyday living if friction were only half as strong as it is now, or if there were only half as much gravity, or if we could walk through solids?

A science class was studying the migration of birds. The teacher asked one of the talented girls to pretend she was a bird migrating south. The sights on the way, changing weather conditions, mishaps and accidents, the winter homeland, all entered into a most interesting account.

One class held an imaginary press conference with George Washington. One of the gifted children wrote a diary of a boy crossing the prairies in a covered wagon. Another gave an on-the-spot account of the flight at Kitty Hawk.

One teacher took a character out of a well-known children's book: *Robin Hood* or *Tom Sawyer*. He brought him into the twentieth century for story-writing time. Gifted children love to join these characters in a new adventure in this era. The children can create the story. For example, Penrod can argue with Booth Tarkington for making him the kind of person he is. The possibilities are limitless.

These are questions and ideas which lead children to abandon old prejudices and concepts and to take a fresh look at things. The teacher need not do this every day. But an occasional release from common life and transport into imaginary worlds is stimulating and refreshing—a mental plunge into a mountain stream.

TEACHING THE BASIC ACADEMIC SKILLS

Encouraging enrichment does not mean a neglect of teaching the basic academic skills. Accuracy, precision, and craftsmanship should be expected from gifted children as well as from others. As gifted children begin the study of biographies, of basic problems of civilization, and the rest, the teacher will find many excellent opportunities opening to teach them basic skills they need more than other children do. Perhaps at this point an

increase in the level of anxiety in the classroom will increase achievement in academic skills.

Since they will always use the library more than the average person will, they should learn to use the card catalogue, the *Readers' Guide*, the reference room. Since they will probably be dealing with books the rest of their lives, they should learn how to skim a book, how to evaluate it. They should learn the steps of individual research; they should know the steps in organizing their material. They should be familiar with several techniques of reporting on books or their study topic. For instance, they can make a tape recording of their report, act it out, illustrate it, discuss it on a panel. They should know the difference between critical, evaluative thinking and creative, imaginative thinking. They should learn when each is appropriate. They should learn how to evaluate their own work and how to accept and learn from the evaluation of others.

Take the skill of skimming a book, for instance. It is a simple matter to tell a youngster to study the table of contents first, to read only chapters of interest to him, to look for the main points of the book, to look for the copyright date, to find out what he can about the author in the preface and introduction. The teacher can even test him on these steps if he wishes to. It is surprising how quickly the gifted children incorporate such techniques of effective reading into their over-all study habits.

Gifted children can learn to work at their own level and speed at the particular assignment the rest of the group is doing. This holds especially true in the upper grades and for mathematics. One seventh-grade boy found a discarded algebra book and worked ahead on his own initiative with only a minimum of help from the teacher. Another boy in the tenth grade became interested in trigonometry while studying geometry. He asked to be permitted to take trigonometry, but since it fell in the same period as his geometry class, he was refused. He then asked to be allowed to spend half his time in each class. His request was granted for a trial period. He soon reached the top in both classes.

A list of the skills to be taught would be very long. One teacher cannot do it alone. If every teacher were to do a small

part, however, the total could be accomplished over the period of twelve years the youngsters are in school.

Every teacher has extremely powerful tools to use in educating gifted children. The first of these is the tool of *discussion*. By this is not meant the "discussion" of questions at the end of the chapter in the textbook, important as these are. The kind of discussion referred to here occurs when the teacher allows children to ask questions on side issues, when they instead of the teacher answer their classmates' questions, when the teacher encourages them and gives them time and opportunity to find their own answers.

A history teacher, for instance, was discussing with the class the Confederation period in American history. They were answering one of the questions at the end of the chapter: "What happened when the States were permitted to print their own money?" The question was duly answered. A careful observer could almost have seen the wheels whirling in the mind of one of the pupils. So stimulated was she by her own train of thought that she fairly leaped from her seat with the question, "Why do different countries now have different currencies and rates of exchange?" The teacher inquired whether the other pupils knew. He admitted that he did not know and allowed the girl to go to the library to find the answer. The girl returned with a thick volume and took her free time the rest of that day and the next to explore it. At the end of the second day, she made a five-minute report to the group on what she had learned about currency exchange.

It is also important that a teacher help the gifted children to gain *perspective* on the problems they are studying. They need to see the big picture. They want to know how their interest or question fits into the whole of human endeavor. One boy was interested in biology, chemistry, and astronomy. The teacher took ten minutes to list the major sciences, to show how they are related, and in which ways they differ. After this quick overview, the boy decided that chemistry and zoology would have to wait while he delved further into astronomy.

Because children are inexperienced they often fail to see the significance of a problem they raise. They may overestimate

its importance or fail to see how important it is. The teacher can help place it in its proper historical social setting for them.

The teacher should have in mind the educational goals for the gifted child. He should keep them pointed at these goals, using the powerful educational tools at his command.

MOTIVATION AND ENRICHMENT

It is not always as simple as it sounds to stimulate and motivate gifted pupils to take advantage of enrichment. Teachers use various techniques to try to stimulate pupils to develop their talent through enrichment procedures. Some of them are discussed below:

1. Teachers sometimes suggest ideas or projects to the whole class and observe which pupils pick up the ideas and work on them. They encourage such youngsters to carry through the projects and give them help where they need it. Such enrichment ideas, it is obvious, originate with the teacher; the students modify them and carry them to conclusion.

2. Other teachers suggest ideas to selected individuals informally or in a conference situation rather than to the whole class. They wait to see if these selected youngsters respond, and if they do, the teacher then continues to help them carry their projects out. These ideas also originate with the teachers.

3. Still another teacher might ask the pupils themselves what they would like to learn in their free time. In such a procedure, the ideas originate with the pupils, but the initiative for doing something still lies with the teacher. He takes it on himself to stimulate the youngsters.

It is often difficult for pupils to tell immediately what they would like to do in their free time. Their interests are often so apparently unrelated to what they think is permitted in school that they cannot relate them to the school situation. Therefore, when a teacher asks his pupils what their interests are, he has to help them explore their interests and not expect them to come up with their final answer right away. Their answer may come in the form of a series of approximations to what they really want to do.

4. Still another approach for the teacher is to observe young-

sters and select anything that a pupil does spontaneously and weave it into the curriculum. Instead of trying to stimulate the youngster to respond and formulate a project, the teacher waits to build where the youngster indicates his interest lies.

What the pupil does naturally may well not be readily adaptable to the school program. The creative teacher has the advantage over the rigid, inflexible teacher at this point. The former can manage to get the pupil's interest worked somewhere into the school program; the latter is at a loss. It should be an axiom with a teacher that if he looks long enough, he will find at least one interest or aptitude on which he can build a part of his enrichment program with any given pupil. Even the laziest, most rebellious pupil has something that the teacher can admire and commend him for (although he may have to stretch a point) and use as a starting point for enrichment.

Here is an example: The teacher began by throwing out the idea of studying brotherhood. He showed the whole group pictures and discussed these. The teacher suggested that the class write an essay on the topic, "Brotherhood." Some of the children wrote interesting essays, but the teacher was very disappointed in Lonny. He was one of his brightest pupils, but most difficult to motivate. He simply wrote, "Brotherhood means to be kind and good." His response indicates clearly that the boy rejected the idea. The teacher, if he were of a suspicious nature, might even believe that the boy rejected him.

The teacher then suggested that Lonny be chairman of a group of children to work on a project in social studies. He did not do a very good job of chairing the committee, according to the teacher's standards, but spent his time getting the others to do all the work.

The teacher then asked him what he would like to do with the extra time he had in the classroom. He simply shrugged his shoulders and walked off.

Later in discussing the problem of Lonny with other teachers who knew him from their classes, the teacher discovered that on a previous committee in an earlier grade, Lonny had done an excellent job of helping others to participate in the committee. Lonny had been concerned that everyone should be

included in the group. On the playground, too, teachers commented that he always wanted everybody to get into the game. In short, he seemed to operate better in human relations than in academic achievement. He seemed to be a better socioemotional leader than a task leader.

The teacher capitalized on this valuable asset of being concerned about others. He made the following suggestion to Lonny, "I notice that you do well on helping everyone getting into the act. I want you to be on the committee and your particular job will be to help everyone participate." Starting from that point, he could relate the motivation for something Lonny did well and gradually include other areas and activities in which he was less well motivated.

Helping the gifted child who resists learning.—The gifted child who does not want to learn presents a real challenge to the conscientious teacher. What can teachers do to help him?

The best approach may be the indirect one. Consider that the underachieving student may have a profound problem with social relations. He has not learned how to deal with the social demand made on him to conform and perform as required in the classroom. Helping him relate more effectively to the classroom and to the persons in it may be the most important thing that can be done for him.

A male teacher can often challenge underachieving boys more effectively than can a female. One of the problems of underachievers seems to be a deficiency of male values and attitudes. A male teacher may need to take the role of a substitute parent with such a boy. He needs to relate to the boy in such a way that the boy identifies with him and wants to imitate him. When the underachiever finds such a relationship, he may be willing to learn the difficult steps to scholastic achievement. The teacher needs to capitalize on the strong supportive relationship he has with the student to get the student to do the difficult and sometimes unrewarding things that make up achievement.

Achievement needs to be taught in a stepwise procedure. It cannot be learned at once. Sometimes teachers expect too much all at once; they have aspiration levels that are too high for

students to reach. At the same time teachers often fail to help them take the small daily steps toward the high achievement. Rather than expecting a student to get all A's or B's on his semester report card, expect him to get an A on a small daily assignment, or an A in one subject, and move from there to longer-range achievement. Help them establish schedules, study procedures, and efficient habits. Begin with things the students do well and move on to areas difficult for him.

Achievement should be taught before the boy or girl becomes an adolescent. As will be seen in a study reported in chapter xiv, it is very difficult to help adolescents to learn to achieve.

The rigid vs. the flexible teacher.—Consider the stern teacher who has rigid standards, who punishes students who fail to achieve those standards, who emphasizes that students must do things his way. Such a teacher tends to produce anxiety in the pupils. We are quite sure now that temporary or chronic anxiety caused by failure (or by other factors) tends to speed up some kinds of learning and inhibits others.¹ Anxiety increases speed of conditioning and probably rote learning perhaps because it increases the pupil's concentration on a narrow range of stimuli and response patterns. Such a teacher can probably produce high achievement in authority-centered bright students studying traditional subject matter requiring rote memory and speed of response. These subjects require what Guilford calls convergent thinking. A creative pupil, however, might be inhibited under such learning conditions.

The flexible teacher who emphasizes inductive problem-solving, who teaches children to use a variety of approaches to learning is likely to be more effective with creative rather than conforming pupils. Creative problem-solving seems to require the reduction of anxiety, an openness to perception of stimuli, a readiness for difference in response patterns. The flexible teacher is more adept at producing what Guilford calls divergent thinking in pupils. The convergent-thinking pupil may learn

¹For a good discussion and review of research on the role of anxiety in learning, see B. Richard Bogelski, *The Psychology of Learning* (New York: Henry Holt & Co., 1936), pp. 459-68.

less well under his tutelage and he may teach traditional academic subjects less well than does the rigid teacher.

The effect of rigid and flexible teachers on various kinds of children learning various kinds of materials and skills needs to be explored further through research.

Slow children who want to learn like the fast.—In a regular classroom in which the teacher is enriching the curriculum of the gifted, it sometimes happens that the average and slow learners want also to take part in the projects of the gifted. This is a desirable situation in many respects, although it causes some teachers worry. At least this much can be said for it; children are being motivated. The problem is that of changing the direction of their motivation without destroying it. Slow learners, too, need to be given interesting projects. An ingenious teacher should be able to ascertain the appropriate level at which the slower students can achieve and offer them enrichment projects of their own. The slower, too, should be held to an adequate level of achievement in their regular curriculum work as well as in their enrichment. The promise of enrichment can serve as an incentive to any student in the classroom to finish his work and take part in projects that are particularly designed for his own pattern of interests and abilities.

THE TEACHER'S PLANNING WORK

Any educational program for gifted children that amounts to anything is based upon careful planning. It is not haphazard or incidental. An important part of planning for enrichment is a review of the curriculum to find where it can be trimmed for the benefit of the gifted children. Like every hedge, the curriculum at times needs to be trimmed or it "just grows." The rapid learners can usually do without one-fourth to one-third of the drillwork the average student needs. They can complete reading assignments quickly. They can probably do their arithmetic in two-thirds to three-fourths of the time it takes the others. The teacher should observe whether he is making provisions for creative learning experiences for them during this time or is holding them to the same time require-

ments as the rest of the class by giving them extra makework? Here may be a place to prune the curriculum for them.

Another part of planning includes the scheduling of time for thinking through enrichment programs for them. Teachers, of course, are busy. Enrichment programs take time to prepare, especially for beginning teachers. Much can be done "on the run," however. He can gather enrichment ideas bit by bit. None should be discarded. One may come in handy at a later date. A good teacher recalls successful practices he has tried in the past. All teachers have used good ideas that have gradually fallen into disuse; they can and should be revived. Principals and supervisors are a good source of enrichment ideas, materials, and suggestions to benefit gifted children.

Still another part of planning should include the scheduling of school time for helping the gifted. This does not mean that the teacher should neglect the slow or average learner to do so. It simply means that the gifted children are entitled to their fair share of a teacher's day. They don't always get it. But when they do, it pays rich dividends.

Identification of the gifted is a step midway between planning and action. It is an important step. As the teacher asks himself, "Who are my intellectually talented, my artistically talented, my creative thinkers?" he will find himself becoming more interested in them and wanting to do something for them. Identification also gives focus to a teacher's efforts. It is essential for a planned, systematic effort of enrichment.

A teacher often wonders how to motivate gifted children. Should he mention their ability to them? Should he tell them their I.Q.'s? There is no reason why they should not at least be told that they are of above average ability. Children's reactions to this information vary. Some tend to strut. Their feelings about this information need to be accepted, discussed, and understood. They need to see that they are doing themselves a disfavor by taking such an attitude.

The teacher can go on to tell them that, because they are able to do their work quickly, he would like to help them find profitable and satisfying ways to use their extra time. If he can

persuade them that he can help them, he will usually find a ready response. From there on, he needs only to encourage, help plan, and make suggestions.

A still more forthright approach can be used. The teacher can make the following proposal: "Susan, I see that much of our classwork is so easy for you that you are sometimes bored with school. I'd like to help make school interesting for you. Suppose we think through some things you might like to learn about when you finish all your regular classwork." The important thing is to provide enough freedom so that gifted children can move ahead into problems that challenge them while average and slow learners are meeting their challenge in the regular work.

Periodic conferences with gifted children and their parents usually pay big dividends. There is nothing easier than to tell parents that their child has ability, that they can encourage the child to develop it, to go on to college, and become a happy, productive adult. The teacher can stress the responsibility that accompanies such talents. When they are ready, he can give them whatever specific suggestions they may need to help their child.

Another important step for the teacher is to refer the talented children to special groups or community agency programs that can give them the special training they cannot get in the regular school program. This means that the teacher needs to become acquainted with the art museum program, the children's theater, the science club, and whatever other opportunities are available in his community.

Many schools have club programs or talent programs after school hours. A teacher who has a hobby or avocation which is of interest to children can use it as the focus of the club's activity.

A teacher can also become more than a teacher to the gifted children in his class. He can become their counselor and friend. This does not take more time. It is the quality of the personal relationship that counts. If he can communicate to them his interest in their problems, his high expectations for them, and his desire to see them and to help them build the kind of life they want for themselves, he will find himself becoming an

extremely significant person to the gifted children who pass through his room each year.

EVALUATION FOR THE TEACHER

If evaluation is such a problem even to the trained research worker, as we shall all see in chapter xiii how can the classroom teacher evaluate the effect of his own methods of teaching gifted children? Here are some answers:

1. Gifted children should be evaluated on the basis of their own performance and potential rather than upon their performance with respect to the group. A gifted child could be doing well in relation to his group getting A's and B's and still be operating well below his own potential.

2. A collection of their compositions, arts, poetry, as well as academic grades over the year will give the teacher some material by which to judge his own influence in producing creative achievements in gifted children.

3. A teacher can keep a record of the outside or extra projects and reports the children do on their own initiative. Does their ability to use references in their reports improve through the year?

4. The teacher can keep notes on what he did that produced creative and high-level academic performance in gifted children. Too often teachers keep the end product but fail to keep a record of the part they played in the process by which the product came into being.

QUESTIONS FOR STUDY AND DISCUSSION

1. What different results do rigid and flexible teachers seem to produce in different children?

2. How can a regular classroom teacher best prepare himself for effectively dealing with the gifted children in his room?

3. Discuss the importance of materials, facilities, class size in the effectiveness of a teacher's attempt to reach the gifted.

4. Discuss the reasons why some educational ideas seem to engage students and other ideas fall flat.

5. Discuss the effect that a teacher's attitude has on his work with the gifted.

6. What procedures can a teacher use to motivate underachievers?

7. Set up procedures whereby teachers can evaluate their effectiveness as teachers of gifted children.

A Case Study of Part-time Grouping

By Jack Kough

Many writers are suggesting that something *should* and *can* be done in special classes for superior students. But there is little written about the process of setting up such classes, about selection of students, administrative provisions, course material, and similar practical and important problems. This chapter gives some information about the methods utilized in one experimental special class in Quincy designed to serve intellectually gifted youngsters in the eighth grade.

ADMINISTRATIVE PROVISIONS

The pupils were selected for the course, called the Special Projects Seminar, on the basis of scores on several intelligence tests. These scores were averaged for each child in the eighth grade, and the children were ranked in the order of their intellectual ability. The youngsters in the top 7 per cent were considered candidates for the course. Thirty-four pupils were eligible and were invited to take the course. Nineteen of them elected to take it. Because of scheduling difficulty or lack of interest, the others were not able to participate. The class met three times a week every other week and two times a week in the alternate weeks.

The junior high principal made the administrative decisions concerning the room, the teacher, and the time that the course could be given. The teacher was chosen because of her interest in work with gifted pupils. Two members of the staff of the Youth Development Commission assisted the teacher.

In setting up the class the staff members of the Youth Commission and the teacher from the school system decided that the pupils could study anything they wanted to. Each youngster was to have complete freedom to choose any area of study that appealed to him. The "curriculum" for the class would consist of learning the techniques of research and gathering information, organizing data, presenting a report before the class, and participating in evaluation sessions. These four major areas could be covered regardless of what topic the individual youngster chose to study.

INTRODUCTORY MEETING

An introductory meeting was held to present the plan of the course to the eligible pupils and to find out whether they were interested in taking such a special class and could fit it into their schedules. The thirty-four candidates for the course met in two separate groups so that there would be more opportunity for discussion. The desks were placed in a circle to encourage discussion. The teacher asked the students whether they knew each other. A few did not; so they introduced themselves and told which elementary school they had attended previously. After the introductions the students were asked how they liked junior high and how it compared with elementary school. These questions were handled in a very informal manner, and there was considerable chatting back and forth.

The next question was, "Do you find your junior high studies to be easy for the most part?" There was general agreement that the studies were easy, and a few remarks were made about specific courses. The next question was, "How many of you find that you can finish your assignments rather rapidly and then have time on your hands?" Practically all the students said this was true for them. Some of them expressed disappointment

and even hostility because the classes covered so little material; others were merely amused by the situation.

They were then asked, "How do you spend your time when you finish your work?" There was considerable laughter as they shared experiences along that line. The following comments were typical: "I usually draw pictures to fill the time." "I sometimes do a little work, but mostly I just fool around." "I bring magazines and hide them behind my book so I can read them." "I read out of other books I am interested in." "That's when I get into trouble. I usually talk with my neighbors and the teacher gets mad. I had to stay after school twice last week for talking." "I get my best daydreaming done in class." After there had been considerable discussion of how they spent their spare time, the students were asked, "Do you feel the school is challenging you to work up to the top of your ability? That is, are you constructively busy practically all the time?" This question was answered by much chuckling and laughter. None of the pupils felt he was doing nearly as much as he could do. Again the group seemed to reflect two attitudes; some wanted a better education while others seemed pleased that it was so easy.

They were then asked, "If you had some extra time when you could study anything you desired to study, what would you like to learn about?" There was little response, and the question was reworded: "Do you sometimes read or hear about something that you'd like to know more about?" This brought a chorus of "Yes!" from the group. The students then mentioned some of the things they would like to know more about. Music, fishing, the solar system, horses, and atomic bombs were a few of the subjects.

The students were then told that in practically all cities across America there were pupils who finished schoolwork easily, who were often somewhat bored by the lack of speed of the regular classroom, and who had additional areas of interest they would like to pursue. It was explained that many schools were experimenting with different ways to help such above-average youngsters gain a better education. The teacher indicated that they probably knew it was easier for them to get their classwork than

it was for many other pupils and that this is what was meant by being above average. "This above-average ability is something to be thankful for and not to be boastful about. You are not the only above-average pupils in the school. Another group is meeting today and there are still others who for one reason or another are in neither of these groups."

After more introductory remarks, the teacher asked whether they wished to be in a special, elective class that would allow them to study any subject that they wanted to study. "The goal of this course is to help you learn more about your area of special interest, how to go about studying it and reporting to others on it." The remainder of this first meeting was spent discussing various topics they might like to study. They were requested to think about it, to talk it over with their parents, and to come to a meeting two days later to indicate what they had decided.

During the short meeting two days later, twenty-eight of the thirty-four students indicated that they would like to join the class. They were instructed to talk to their school counselor to see whether their schedules could be modified to allow them to take the course. Nineteen of them were able to fit the class into their schedule.

CHOOSING AN AREA OF STUDY

The pupils in the class spent several periods thinking about and discussing topics that they would like to study. They talked about how they could find information on their subjects and whether they felt they could make reports on them. One girl had chosen a topic, and then in class she said, "But I am afraid that it is too hard." One of the boys remarked, "Most of the subjects are 'too tough' if you want to look at it that way. But if we want to dig into them far enough, we can get a lot of background material. Say you want to study some engineering area and you have to learn about mathematics before you can get into your subject. That's all right. We can still do it if we really want to work that hard. None of these subjects are really too rough for us to learn about." This particular boy showed

the same attitude in choosing his own topic, in preparing his reports, and in helping stimulate others during the semester.

Several youngsters spent the entire semester studying something that really was not the core of their interests and did not discover their real interest until the semester was almost closed. One girl, for example, wanted to study atomic power, gunpowder, volcanoes, and finally the solar system. At the end of the semester she said, "What I found out about myself was that I was really interested in ballet, not in these other things. But I didn't think there were any books written on it so I didn't choose it."

Some of the children needed to learn how to reduce their topics to manageable size. Others needed to learn how to expand their study to a more comprehensive coverage of the topic.

The topics that the pupils decided to use included Greek and Roman mythology, the history of horses, the life of Chopin, space travel, prehistoric man, military airplanes, the life of Albert Einstein, the history of helicopters, the anatomy of a frog, the solar system, the human digestive system, guns, prefabrication of homes, submarines, and the earth.

MEETINGS FOR STUDY AND PREPARATION OF REPORTS

After the students had selected topics, several classes were spent discussing how to do individual research, how to take an area of interest, reduce it to manageable size, dig into it, and learn everything of interest about it. During the several days that were spent on this, the class visited the public library, the school library, and a college library. Some of the younger people, even in this gifted group, had surprisingly little knowledge of how to use a library. Two of the nineteen did not even have a public library card. Only about one-fourth of them had sufficient understanding of the filing system to locate a book without just searching through the shelves. Most of them seemed to be surprised at how much material was available in their areas of interest. The library trips were short in order to fit into the class periods, but they were sufficiently long for the youngsters to check out the books necessary for beginning on their individual research.

had to prepare it. Although the information was interesting there should have been a lot more of it."

"You read too much and your report was too short. I was just becoming interested when you quit."

"Your report would have been improved if you had made a model of that jet engine you were talking about and shown us the model. It wouldn't have been too difficult."

"You knew what you were talking about. Your report was organized well and you had a lot of information."

"You kept saying 'uh.' You moved from one side to the other. Your report seemed to be one long sentence. You didn't look at us but at the book."

STUDENT-TO-STUDENT TEACHING

It was interesting to notice how the pupils added to the thinking of one another. Early in the course, one girl indicated that she would like to study math but she was afraid there wasn't any material available on it. One of the boys turned to her and said, "I was in the library the other day and there is a book on mathematics called *Fun with Mathematics*. It is in the children's department of the public library. It shows you how you can make and use the slide rule; it shows you about magic squares and how to work problems. Really, it is a higher mathematics book but it is written on *our* level and I think it is fine." While he talked, the girl was busy writing the name of the book so that she could look it up. This same boy added information in many different areas. One of these girls was talking about a volcano, and he proceeded to tell her how to make a model of a volcano and what chemicals to use.

While discussing a report, one student said, "In our junior high library we have a book called *The World about Us*, which is material reported in *Life* magazine. Some of the things in there are very good. There is a whole section on astronomy and other sections like that. Those of you that are studying biology and the stars and such things might find it pretty interesting. I thought I would just tell you that it is up there."

One student gave a suggestion to another who was studying space ships. He heard him talking about space, so he said, "I have

an idea for you. Up in the library the new *Popular Science* magazine has an article in it about this plastic space ship that we are going to be shooting out into the ozone in the not too far distant future. It has a model of the thing. You might like to look into it." This boy also brought college textbooks from home on several subjects to give to different classmates. This underscores the fact that when youngsters of this caliber are put together and the stage is set for co-operative thinking, much of the teaching can be from student to student and much less from teacher to student.

FORMAL AND INFORMAL GUIDANCE OPPORTUNITIES

A class of this type offers many excellent opportunities for guidance. College attendance was a topic of group discussion during several classes. The use of a college library, visits to college classes, and discussions of the merits of college were included in the class activities. Most of this came after the reports had all been given.

There were many opportunities for the teacher to have informal chats with youngsters as they were working on their projects. Often these talks were about the projects that the students were working on, but sometimes they reached into other matters. The teacher talked with one boy who said, "I am not sure what I want to be when I grow up. There are so many things that I want to be. I would kind of like to be a policeman, I would like to be an engineer, I would kind of like to be a carpenter because I like to build things. There are just a lot of things I would like to be." The teacher suggested, "It seems to me that part of your job will be to find something that will challenge you and you will enjoy doing all your life. I have an idea that if you started to be a policeman it would be fun at first and it would not be long before you got pretty tired of it." The boy answered, "Yes, I have thought about that. I think I would like to be an engineer sometimes but then other times I don't know for sure if I would like it. It certainly would be fun to be in the first space ship or something of that nature." The teacher suggested that if he wanted to become an engineer or a doctor he had the ability for it but that he would probably

need to study a bit harder than he had so far. When asked how hard he studied, the boy laughed and said, "I don't study at all. In our confirmation class at church I got 100 on the test but I still didn't study. Today we have an English test. I haven't studied a bit but I still bet I'll get a good grade."

One day this boy asked the teacher, "Why do you do this kind of work?" The teacher replied, "I can look back five years from now and say to myself, 'Now here is this boy, meaning you. He had plenty of brains. He was a nice kid but he had never been really exposed to the idea that he should go on to college and really use his brain. If I can get to know him pretty well, and if he likes me and I like him, and if he has some success in this class and enjoys it maybe that will help him learn that college would be a good thing for him. Then he might go ahead and be an engineer or a lawyer instead of taking a job that would not challenge him.' In the years that lie ahead I can put my feet upon my desk, lean back, and say, 'That was good. I got to know this young man and got him to decide that he ought to really use his ability.'" The teacher laughed as she said this, and the boy grinned and replied, "This all makes sense. I can understand it."

During such an informal chat, there is considerable opportunity to raise the sights of these youngsters. The same boy at the end of the semester was talking about law school and how he felt he would like to become a lawyer. It would appear that his aspirations were a bit higher. Time will tell whether such changes are superficial or permanent.

REACTIONS TO THE SPECIAL CLASS

One of the girls chose to study the human digestive system because she did not know anything about it and it sounded like an interesting subject. Three weeks later, she was asked if she had learned anything, and she said, "Oh, yes. When I started this thing I didn't know anything about digestion, and now my problem is how to get everything I know organized into an intelligent report." She was asked if she was enjoying doing the study, and she said, "This has really been fun. I am working

hard. Harder than I usually work for any course, but I am really enjoying it. I am getting a lot out of it."

About two-thirds of the way through the course the pupils were asked to give a short evaluation of the course without signing their names. The following are some excerpts from the paragraphs that the pupils wrote:

"I enjoy this class very much. I feel that it is helping me to learn more not only about mythology but also how to express myself better. I know I need to work harder on the subject I have chosen. The class has helped me to learn to do things without someone constantly telling me to get to work."

"This course has been very helpful to me in learning how to pull a report together and to give it without almost jumping out of my skin when anybody mentions speaking in front of a group. Some of the reports I did not particularly like and thought they were quite boring. Listening to these reports, boring or interesting, helped me to learn to pay attention, however. I think the evaluation papers are good; they help you know what you can do to improve your public speaking ability. Also the class helps you to really dig into a subject and find out all you can about it although most of us have only scratched the surface of our particular topic."

"If you have difficulty in giving speeches this class helps you to improve. It also helps you to study any subject that is of interest to you. I believe that the pupils next year will enjoy this class as much as I have because this is one class that I look forward to attending. If we took a vote as to whether to continue this class next year I would be 100 per cent in favor of it."

"This class gives a good chance to explore an area that you are interested in everywhere from astronomy to zoölogy. I myself got a good deal of information from this course in my field and from the fields the other people had selected. I would like to take this course next year. I even have the field already picked out."

"This class is very enjoyable in that it gives you a chance to study something which you are interested in rather than always studying history, math, etc. I also like the class because grades are not given every time report cards come out."

"I think this class is fine because it gives the pupil a chance to learn how to make good reports and how to correct his faults. It helps a lot in getting over the feeling of being afraid to speak in front of a group of students."

"This class has taught me to get out and work on my own without the help of teachers. I feel that this class is an excellent place to learn things in our own particular interests. I seriously feel that there will be things in life that we will have to do even if we don't want to do them. Sometime in the future you should give us a subject and just give us so much time to complete it. That will show us how capable we are at taking a subject whether we like it or not and making a good report on it. This certainly should be easy for most of us, as we are supposed to do things that others of our age would find somewhat difficult."

The reactions of all the parents of youngsters in junior high were somewhat mixed. At the beginning of the course, the young people were asked to talk it over with their parents in order to get their views on it. The majority of the parents were very much in favor of their children's taking it. This was particularly true of the parents of the youngsters who elected to take the course.

There were some negative reactions to the course. These came primarily from parents whose youngsters did not qualify for the class on the basis of their I.Q. tests. A few mothers complained because their youngsters were not invited to participate. At least one mother compared the moral virtues of her child with the moral virtues of one of the young people who was in the course. She felt that it was certainly a shame that such an individual was permitted to do something her child could not do, and she was generally quite hostile. These complaints were handled by the junior high school principal.

The reaction of the librarian was interesting. She said to one of the staff members: "This is really fine. I enjoy having the students from the Special Projects Seminar because I feel the library is getting used the way a library really should be used. These youngsters come in and get material they want. They ask a few questions, then they get right down to work and really study. I feel it is a valuable use of the library." When

she finished her statement, one of the gifted children who was studying there came up to her and said, "Could you please tell me where I could find some information about what happens when an electric current touches a muscle?" She said, "My, that is a tough one," and then suggested that the physiology bookshelf would probably have some books with information on that question.

CONCLUSIONS ABOUT THE CLASS

1. It seems that the youngsters in a group such as this can do much more to direct their own affairs than average youngsters can. They can carry on higher-level discussions as leaders and participants, evaluate their own work and the work of others, choose their study subjects, and in general do much more than average children to govern themselves. One of the real challenges to the teacher is to help gifted children learn the self-direction of which they are capable.

There was definite improvement in the participation in discussions and in the student officer's ability to conduct the class during the course. This was evident not only to the ones in charge of the class but to the few visitors that were in a position to evaluate the progress.

2. It also appears that gifted youngsters are not automatically well-motivated youngsters. Superior students can be placed together in a group, but there is no guarantee that they will automatically do their best work. The teacher still has the educational job of trying to find "keys" to motivate such youngsters.

The problem, however, seems much less acute than with average or slow-learning children. Experience with this class seems to indicate that motivation varies markedly. Some children are highly motivated, really want to accomplish things and know how to go about it. These are a teacher's delight. Other children are fairly highly motivated but have not learned the techniques of study or good work habits. They need to be taught such things. A third group seems to lack motivation and may or may not have good study habits. The teacher needs to stimulate in them a desire to learn and to experiment.

The discipline problems in a group such as this arise primarily

from lack of motivation, for example, talking instead of studying. Unlike the more serious discipline problems that may arise in the regular classroom, these problems can be met primarily in terms of instilling motivation.

3. The teacher is able to do much for these youngsters in terms of social as well as intellectual growth. In discussions and in personal conferences, the teacher can talk to these youngsters about any social handicaps or strengths that they have and can encourage them to develop to the best of their ability. The rapport that can be established in such a class may make this a bit easier for the teacher of a special group than for the regular classroom teacher.

4. The teacher's responsibility in such a special course is somewhat different from that of the teacher in a regular course. In a regular class the teacher has a real responsibility about subject matter, content, facts, and figures. In a gifted-child group, the real responsibility is to reach the process of studying, the new methods of gathering facts, organizing them, and reporting them. By the same token, the teacher's attitude probably should be somewhat different for a course such as this. The teacher should not see himself as the wellspring of information as much as he should see himself as the one who helps young people locate sources of information, accumulate and share knowledge, and think together. Many of these youngsters by junior high school age will be delving into subjects far beyond the knowledge of the average classroom teacher.

The teacher must be willing and able to seize on situational "cues" and create a learning experience. Spontaneous situations provide some of the best teaching opportunities. The teacher also needs to recognize the tremendous value of pupil-to-pupil teaching. The teacher should see his role as one of helping young people help themselves. If a teacher feels he should be in the center of the stage himself, he probably should not try to work with a gifted group of this kind. Democratic values are important in all classrooms, but they are doubly important in the class with gifted youngsters.

5. It would appear that a special course such as this is most effective after it has built up a tradition in the school. If people

understand what the course is about, if they know how it fits into the system, and if youngsters with above-average ability are eager to be included in the course, the chances of its succeeding are greatly improved. Take, for example, the varsity athletic team in any community. Everybody knows about it. It is important to young people. Students are eager to be members of it. The same thing can be true of a group such as this. But it takes time to establish such an attitude.

6. Another valuable tradition is the tradition within the class of "intellectual excellence." Such a tradition is also built over a longer period of time than was available to this class. The standards did improve, however, each time an especially good report was given. If gifted youngsters can be in special groups over a period of time, this tradition of excellence will increasingly challenge their intellectual capacity.

7. If work with gifted children does not start until the junior high level, many of the basic skills will need to be reviewed or taught at that time. It appears possible, however, to teach second-, third-, and fourth-grade gifted youngsters the process of individual activity and study, the rudiments of making a good report, and good study habits.

8. Participation in the group can be encouraged by the proper seating arrangement. Chairs that are bolted in rows to the floor do not favor good discussion. If the youngsters can pull their chairs into a circle for evaluations and discussions, the participation almost automatically improves.

9. The periods of discussion and evaluation of individual reports were a constructive and educational part of the course. One report a day is probably sufficient for such a program. This would allow for more discussion on the topic of the report.

10. It is important that the youngsters themselves were confronted with the task of choosing a subject to study. No one told them what to choose. The process of choosing independently is probably important in helping them "find" themselves as individuals and in helping them decide what kinds of interests they want to have and what kinds of persons they want to be.

While this particular case study covers only one approach to the problem of gifted children, it is a valuable approach. Signif-

icant things can be accomplished for youngsters by having them in a special elective class two or three hours per week. This case has been presented in the hope that showing some of the specific details of one program will encourage others to establish programs to fit their schools.

QUESTIONS FOR STUDY AND DISCUSSION

1. What do you think about centering a curriculum around techniques of doing research? What are the strengths and weaknesses of such a curriculum for the gifted?
2. How should the idea of participating in a special group be presented to candidates for the group?
3. What individual differences are there in the way in which gifted pupils select an individual topic or project for study?
4. How can a teacher capitalize on the special opportunities for guidance provided in a special group?
5. By what criteria can a special class be evaluated?
6. Compare the case study of this class with the advantages and disadvantages of special grouping discussed in Chapter V.

The Role of the Administrator in Educating the Gifted

ADMINISTRATIVE GUIDELINES IN PROGRAM DEVELOPMENT

The administrative problem of educating the gifted is to translate a rather nebulous idea expressed as "educating gifted children" into sound, practical, workable educational programs. It is the responsibility of the administrator to structure the school situation in such a way that programs can become a reality. The following procedures are offered as guides for administrative work in this aspect of education.¹

Basic philosophical convictions.—American education is committed to providing whatever the child needs to reach his full potential. Establishing and maintaining an educational program to provide for the needs of the gifted is an integral part of this philosophy, it is a practical working out of the implications of the philosophy.

Workable objectives.—An administrator should be expected to know what he hopes to attain with the program. Although the objectives may be stated rather tentatively in the early

¹ Adapted from Clifford W. Williams, "Characteristics and Objectives of a Program for the Gifted," *Education for the Gifted* ("Fifty-seventh Yearbook of the National Society for the Study of Education," Part II [Chicago: National Society for the Study of Education, 1958]), 147-65.

Inservice programs.—Teachers need to be encouraged to make formal study of the education of gifted children and thereby to increase their capacity to teach them effectively.

Public relations.—Parents need to be kept informed of the objectives of the program and how it is progressing. Parents of children who are not in the program need to be assured that their children are not being slighted because of the addition of a program of this kind. The public needs to be shown that a program for the gifted is justified on the grounds of our philosophy of education.

Community resources.—There are a number of educational facilities and agencies in the community that can be used in the education of the gifted. These include churches, youth service agencies, museums, parks, theaters, industries. Effective administration includes the organization of such facilities to bear upon the program within the school. Parents, too, have many talents that can be used both formally and informally.

Assessment of the program.—This can be done informally in terms of subjective evaluations or formally through the use of testing instruments and other devices. The financial resources of the school will set the limit on the amount of formal evaluation that can be done, since this is essentially research and can be very expensive.

ADMINISTRATOR AS A TEACHER

The problems that an administrator faces in supervising teachers in a program of educating gifted children are basically the same as teachers face in developing the talents of the gifted children in their classroom. Teachers are expected to deal individually with the children and develop the unique pattern of strengths and talents that the children possess. In a like manner, the administrator needs to deal individually with his teachers and help them to develop the unique teaching ability that they have. Thus, no two teachers should be expected to deal with equal effectiveness with all kinds of talented children nor to develop a stereotype program. The enrichment program that each teacher develops in his classroom should be a unique expres-

sion of his temperament, personality, training, and his relationship to his pupils.

Teachers are expected to start with the abilities that children have and from this starting point proceed to work on the weaknesses or deficiencies in the child's intellectual development. Principals, too, need to start with the strong points of teachers, the things they do well, and move on from those to areas where teachers are deficient.

Administrators set the atmosphere in their school. If they are successful in setting an atmosphere of acceptance and encouragement of a wide variety of children rather than a desire to develop conforming and stereotype children, a program for gifted children has a good chance for success. Such an atmosphere of acceptance of diversity needs to be communicated even to the custodian. A custodian who complains because the desks in the classroom are not in straight rows and, therefore, make his cleaning job more difficult, can be a detriment to a flexible program of education. Handling such mundane problems as these is the responsibility of the administrator.

THE ADMINISTRATOR AS LEADER

Since the principal is the appointed head of the school, his functions as leader need to be studied and discussed.

The principal needs to know when to use group processes and when to accept individual responsibility. He must assume responsibility for what goes on in his school, and not pass on that responsibility for the school's actions to the faculty as a whole. In the formulation of policy, however, and pooling ideas that will eventually become policy, the leader must use group processes. Between these two extremes are many instances in which it is important to use a group process of decision-making and many in which it is better to decide individually. For instance, in gathering the material for an evaluation report on the program for gifted children, the use of a group is probably most effective. In this way, divergent points of view will have a hearing. In the actual writing of the report, however, an individual approach is probably more fruitful, since the process of organizing and writing is almost impossible for groups to do. Overly democratic

leaders as well as autocratic ones reduce the over-all effectiveness of a school, and of programs for the gifted.

The kind of leadership the administrator exercises will have a direct bearing on the school's climate and morale, which in turn will influence the program for educating gifted children in that school.

THE ADMINISTRATIVE CYCLE

The first phase of the cycle of establishing a program for the gifted is the sensing of the need and the formulation of the problem. This idea of doing something for the gifted needs to be translated into action. The second phase is that of the orientation, pooling ideas, and sharing them. This phase might be accomplished by setting up a committee to study the program and to visit other schools that have had other programs, to read reports of what other schools are doing, to attend workshops or extension courses on the gifted, and to invite visiting speakers in to discuss how their programs operate. The second phase also includes assessing the temper of the community and its readiness to accept the program of the kind being contemplated.

The third phase of the cycle involves trying a number of tentative approaches by means of pilot programs, trial phases, and small experiments. This phase will eventuate in the selection of a major program with the appointment of personnel, administrative adjustments, budgeting, and evaluation of the program.

The final phase is the adoption of the program and institutionalizing it as a permanent part of the school program. Policies have to be made in regard to the program, the school board needs to approve it, and the budget needs to include items to support the program financially.

THE ADMINISTRATIVE STRUCTURE OF EDUCATIONAL PROGRAMS

The structure at a system-wide level should be mirrored in the structure in the local school buildings.

Committee work.—In the initial phases of the program, both at the system-wide and the school level, it is advisable for an administrator to use a committee to gather information and make recommendations in regard to future policies.

Supervisory assistants.—Again at the system-wide level and the school level it is advisable to have someone who is specifically charged with the responsibility of developing the project. A supervisor visiting the schools will help maintain a co-ordinative program. Within a local school a part-time co-ordinator as in the Portland Program, can assist teachers and principals carrying out specific assignments and parts of the program.

Specialized personnel.—At both the system-wide level and the local level, specialized personnel are needed from time to time. These include guidance officers, curriculum supervisors, and testing experts. Such specialized personnel can help in the screening program and bring enrichment to the children.

SELECTION OF TEACHERS

A method of selecting teachers for gifted children needs to be devised by the principal. Not all teachers are equally effective with gifted children. Some do a better job than others. The following four groups of characteristics are based upon observation of teachers who have worked effectively with gifted children in special groups and in the regular classroom.

Flexibility and creativity.—Teachers who are flexible and creative can more easily recognize creativity when they see it. They can more easily accept spontaneity and nonconformity among gifted youngsters. They can reduce the level of anxiety in the classroom. In general, they can more readily adapt their teaching methods to the needs and abilities of gifted children.

Such teachers are especially free from rigid lesson plans, set programs, and the questions at the ends of chapters. They seize and build upon spontaneous situations that develop in the classroom. They are sensitive to questions, prejudices, and attitudes. They easily abandon or modify prearranged plans in order to follow a new path and still manage to weave in whatever material needs to be covered.

Concern for individuality.—Teachers who in the regular classroom recognize that individual differences among children are important attempt to individualize instructions for all children and encourage them to develop their own individuality. They understand not only the needs of gifted children but also the

particular needs and individuality of average and slow learners.

Maintenance of Standards.—The effective teachers of gifted children are energetic and demanding; they hold high standards of achievement for gifted children. They actively encourage them to set a fast learning pace for themselves and to "stretch" their minds.

Devotion.—This is one of the most important general attitudes on the part of teachers of gifted children. Such children are a challenge to the teacher. There is an active, pressing desire on the teacher's part to improve the education of gifted children. Effective teachers are not interested merely in the achievement or intellectual power of gifted children; rather, they are interested in them as whole individuals. The effective teacher is one whom a gifted child will remember as a significant person who has made a difference in his life.

ADMINISTRATORS' ATTITUDES TOWARD GIFTED CHILDREN

School administrators, like many other people, hold mixed attitudes toward educating gifted children. Their attitudes are communicated to other staff members and affect their attitudes for good or ill. The following attitudes can probably be discerned among the principals of any dozen schools picked at random:

There is the principal whose heart is with the average child. The first responsibility of the school is to this group of children as he sees it. He feels that educators must be sure that children get the basic educational stuff to make solid citizens out of them and that all the rest is folderol and has no place in the schools. Another principal sees himself as an administrator of a smooth-running, well-scheduled organization. The schedule is the thing of first concern to him. The first question asked about any suggestion innovation is, will it fit into the schedule? If the proposed program passes its first hurdle, it may be ready for a hearing on its own merits.

Still another principal is so far out of touch with his faculty that were he to support a program, they would automatically oppose. He shakes his head in despair at the mere mention of enrichment, acceleration, or special grouping, knowing that his

faculty would never accept them. Another principal of this kind may doubt that his teachers can do the job. He decides for them that special provisions for gifted cannot be made in his school.

Some principals spend so much time in the "housekeeping" details such as counting milk money, buying food for the hot-lunch program, acting as half-time secretary, or teaching here and there that time for planning and supervising a program simply is not available to them.

On the other hand, many principals have gone far beyond the call of duty for the sake of gifted children. One elementary school principal, for example, taught French to a group of gifted children one period each day since no one else was willing to do it. Other principals have relieved the classroom teachers so they could prepare special projects for gifted. Such principals encourage teachers, set the tone in their school of acceptance for the gifted, rearrange schedules, and consistently have held the point of view that special provisions for gifted children should be made.

School boards and taxpayers have to consider local conditions in determining the educational program for the community's gifted children. The kind of program that is practical and desirable depends on the size and complexity of a community and the attitudes of the local public. The best use of the community's non-school resources is also an important consideration in planning the program. Use of community resources will be discussed in chapter xii.

COMMUNITY SIZE AND COMPLEXITY FACTORS

In the course of studying the programs for gifted children in large and small cities and in private schools, we observed that large cities seemed most likely to have special schools or classes or special grouping of one sort or another for gifted children, while small cities and private schools were more likely to use simple enrichment plans.

The large city has a heterogeneous population, consisting of diverse ethnic and racial groups and neighborhoods: slums, modest residential areas, apartment areas, and areas of wealth.

The large city also has anonymity. People do not know one another very well. Therefore, they are not very much interested in what class the neighbor's child is in or whether the neighbor's child gets into a school group taught differently from their own child's group. In a large city, parents may not know of the experiences or even existence of special classes unless their children are in them, whereas in a smaller community parents whose children are not in the program may feel that the gifted children are unjustly favored.

For these reasons of heterogeneity and anonymity, the large city can easily provide a program of special grouping for gifted children. New York City has gone further than any other in this direction. Other cities with special classes or groups for the gifted are Baltimore, Birmingham, Cleveland, Los Angeles, Indianapolis, Pittsburgh, and St. Louis.

The larger cities can make efficient and economical use of special groups and teachers. Their generally large classes—sometimes forty or more children are in the average elementary school classroom—make it difficult for teachers to work out enrichment procedures for individual pupils. In these circumstances it is natural to set up special classes of smaller size for gifted children and for any other groups requiring special treatment. Special treatment for special groups is more likely to be acceptable to the public in a large city also, because these people expect variety and specialization in city services.

The communities which are least likely to have a special-group program are those with the most money to spend on their children. These are generally upper-middle-class suburbs of large cities. They are fairly homogeneous in socioeconomic status and send 80 to 90 per cent of their youth to college. They may spend twice as much money per pupil on their schools as does the average community. Their schools have relatively small classes and well-trained teachers and are very well equipped. They are likely to rely on enrichment in the regular classroom.

Even in such communities there has been a good deal of special attention to the abler pupils. This may take the form of providing a special "enrichment teacher" who works with the regular classroom teachers to give special stimulation and greater

variety to these pupils. In one such community, Evanston, Illinois, an experimental program has been carried on with one special class for the gifted, several part-time groups for bright children in other schools, and a systematic program of enrichment in the regular classroom in still other schools. If this approach to the problem shows one method to be markedly superior to the others, perhaps this method will be generally adopted.

Adaptations for small communities.—The small city and the rural school are in no position to provide special grouping for gifted children, but they have certain advantages. Classes tend to be relatively small in such schools, and teachers have some time to individualize instruction. Some rural and village schools plan their programs about centers of interest, minimizing grade lines and thus allowing gifted children to work on projects according to their ability. The gifted child in such a school is not forced to do work laid out for a single grade. He may extend his work over areas not known to other children, or he may accelerate his progress through school.

The small school also offers opportunities for pupil leadership. The teacher of a one-room school, or a multigrade room, may ask the abler children to help her by leading small groups on projects or by teaching some of the younger children.

Since the small school cannot have specialists on its staff, people in the community with special interests and skills may act as guides and models for individual children. A boy who has read all the books in the school library may be sent to a lawyer or a minister for guidance in his reading, or he may be sent to the one or two people in the community who have extensive personal libraries. A girl with musical talent may be sent to the housewife who was once a music teacher for advice and coaching.

For middle-sized communities that are too small for special classes in every grade, a certain amount of special grouping can be organized by combining two or more grades. For example, a particular elementary school in a small city has co-ordinated programs for the gifted, the physically handicapped, the mentally retarded, and the average pupils. While gifted children are given a greatly enriched curriculum, their contacts and experi-

ences with normal and handicapped children are so numerous that no pupil seems to be conscious of segregation.

Gifted children are selected clinically, a minimum I.Q. of 120 being recommended but not always required. The younger children in grades 3 through 6 are put in classes of about thirty pupils and assigned to one homeroom teacher for two years. The homeroom is their only classroom, but they use other school facilities, including the shops, gymnasium, auditorium, home-economics room, library, and excursion busses. They are taught art, music, science, and health by specialists. The gifted children in addition have a special program co-ordinated around one theme, such as "Evolution of Music," "Health through the Ages," "Evolution of Democracy," or "The World of Tomorrow." The children learn both by independent study and through committee and group discussion, and the group's special study culminates in original plays, operettas, assembly programs, exhibits, scrapbooks, radio programs, or civic enterprises.

In the seventh and eighth grades, the gifted children, like all the children in the school, study core subjects—arithmetic, English, and social studies—for half a day with one teacher. During the other half-day they follow various elective courses: music, art, general science, home economics, shop, social dancing, personal social problems, journalism, dramatics, language and physical education. The average and the gifted children have their electives together in the morning and their separate "core" groups in the afternoon, while the dull-normal, and handicapped groups are with their homeroom teachers in the morning and have their electives in the afternoon.

The high school in the small community cannot provide the wealth of elective and honors courses a big school provides as a matter of course. But the small high school has the advantage of a close personal relationship between teachers and pupils. It can make special arrangements even for one gifted student. This student can receive special tutoring in trigonometry, or can carry on a special project in history which involves the use of books borrowed from the state university library. Often the gifted student can be a kind of informal apprentice to one of the teachers.

Some combination of acceleration with special tutoring or informal apprenticeship seems to be the best arrangement for a gifted child in a small community.

The importance of leadership.—While the school program is subject to systematic community influences, powerful or persuasive individuals or groups in the community can create programs that do not fit the general pattern. This is especially true in the undecided middle-sized community.

The superintendent of schools may determine whether there is to be special grouping or not, since enough people will look to him for leadership. A strong principal may create a program in his own school quite different from the trend in the city. A committee of citizens or a service or women's club might have a large voice in determining the nature of the program.

Furthermore, the interest and efforts of a small group of people may bring about the decision to engage in a program for gifted children. For instance, in a certain large city that had been giving little or no attention to the gifted, the education editor of one of the newspapers began running articles telling of programs for gifted children in other cities and noting their absence in the local community. Within a few months there were committees of teachers at work on the problem and within a year a program was announced by the school administration. True, the city was moving with the trend, but it was probably speeded up by the newspaper.

THE COST OF EDUCATING GIFTED CHILDREN

Since the American public wants to do well by all its children and provide them the kind of education they need, they have typically responded by providing the finances for an educational program that encompasses the needs of handicapped children and retarded children. More recently, the public has begun to respond by providing money for the education for the gifted children.

These are some of the sources of expense.

1. The first expense arises out of the necessity of identification—test materials, costs of special personnel and administration, and scoring and interpreting the tests.

2. The second expense is that of enrichment, special grouping, and acceleration. Acceleration is the most economical because the child is given less school time. Classroom enrichment, according to Gowan,² when properly carried out, is one of the more expensive ways of taking care of the gifted because it requires a reduction of the teacher-pupil ratio. It also involves much individual attention and free time for the teacher's preparation. Special grouping is a more efficient way of dealing with gifted children in so far as over-all cost is concerned.

3. Special services, such as guidance personnel, administration, materials, and facilities, and transportation, secretarial help, evaluation, and the like, is generally the hidden expense of the program.

In order to reduce the cost of the identification program, it should be incorporated in the regular testing program. The initial screening can be done with the usual tests. Giving costly individual tests can be done only in borderline cases.

Coroners cannot easily be cut in the matter of providing curriculum adjustments, however. It is unrealistic to expect classroom teachers to provide for the gifted without reducing their class load and making available to them more facilities and materials, provisions for inservice training, special staffing, and special equipment.

As a general rule, the more narrow the definition (for example, 1 per cent of the population), the greater will be the cost per individual student, but the less the over-all cost of the program. A school that identifies 10 per cent of its children as gifted and enriches their curriculum will have somewhat lower per pupil cost but higher over-all costs.

Rough estimates of the cost of programs for the gifted cluster around 1 per cent of the total school budget. Spencer estimates that for an adequate gifted child program in an average high school an increase of 1½ per cent of the total operating budget is required.³

²John C. Gowan and M. E. Winward, "The Cost of Special Education Programs for Gifted Children," Northridge, Calif.: San Fernando State College. (Mimeographed.)

³Spencer, "The Identification and Education of the Academically Talented Student in the American Secondary School," *Conference Report* (Washington: National Education Association, 1958), p. 42.

flat rate of 2 per cent of total school population has been taken as the per capita base. Not all systems have the program in all grades, but this aspect has been ignored. In short, the table is a first, rough estimate in assessing costs in a new area and should not be used as a general yardstick.

The table shows three levels of effort that schools are making: (1) maximum level, reflecting the best in current practice; (2) moderate level, very considerably less than ideal, but still involving some curriculum adjustment, and special staffing; and (3) minimum level, defined as that below which any effort is of token rather than of real educational value.

TABLE 3

TOTAL AND PER CAPITA ESTIMATED COSTS OF GIFTED CHILD PROGRAMS
IN CALIFORNIA SCHOOLS BY DISTRICT SIZE AND BY DISTRICT EFFORT^a

Size	E	MAXIMUM SUPPORT			MODERATE SUPPORT			MINIMUM SUPPORT		
		budget p.c. f			budget p.c. f			budget p.c. f		
75	1500	150	100	1	35	16		10	7	
50	1000	120	120		21	21		8	8	
25	500	70	140		18	36	1	6	12	
15	300	50	160		15	50	1	5	17	1
10	200	35	175	1	12	60	2	4	20	2
5	100	20	200		9	90	2	3	20	2
3	60	15	250	1	6	100	1	2	33	1
2	40	10	250		4	100	1	1½	37	1
1	20	5	250		2	100	2	1	50	1
½	10	3	300	3	1	100	1	½	50	2

^a School district size in thousands

E Estimated number of gifted (2 per cent of figure in first column)

budget Special budget for gifted in thousands

p.c. Per capita costs

f Frequency of occurrence

PROVIDING FACILITIES AND MATERIALS

Extra facilities and materials, although they increase the cost of education, benefit not only the gifted but other students as well. Money spent on laboratory equipment, musical facilities, library books, and so forth can be used not only by gifted children but also by children of other levels of learning, too.

The library.—Good library facilities^a are generally considered

^a *Ibid.*, p. 5.

^a Adapted from Lillian L. Batchelor (ed.), "The School Library and the Gifted Child," *American Library Association Bulletin* (February, 1958), pp. 93-108.

indispensable in a program for educating gifted children. The library is in a position to provide enrichment for gifted children and to supplement the classroom work. The librarian should be consulted by the classroom teacher so that she can be alerted to the kinds of programs that are being carried on in the classroom and can thereby help the gifted student.

The library is not only repository for the tradition of the culture in literary, historical, scientific and artistic treasures, it is also an important place to learn special techniques such as independent study and research. The library not only helps fill out the student's fund of knowledge and information but also helps him develop techniques for further increasing his fund of knowledge. The librarian is also an important person for gifted children to get to know.

Reading guidance is needed, however. Gifted children should not be expected to develop good reading habits automatically even though they are omnivorous readers. They, too, need encouragement and direction. The librarian, by providing displays of good reading books, can stimulate the awareness of reading for gifted children. The librarian can emphasize various kinds of books such as biographies, science books, or novels.

At New Trier Township High School,¹⁰ a great books course, patterned after the adult program and using some of the same books, was offered to a group of seniors each year. Such a course stimulated the use of the library.

The traveling high school science library administered by the American Association for the Advancement of Science with the financial support of the National Science Foundation has provided a source for the 104 schools that are included in the program during 1956 and 1957. The traveling libraries consist of 200 books divided into eight units, each dealing with the subject of science. Eleven sets of the books were circulated during the first year of the program. The effectiveness of the program was revealed by evaluation questionnaires completed by 77 per cent of the students at 59 of the 104 program schools during 1956 and

¹⁰Lionel Lightner and Robert H. Carpenter, "Great Books Course Sends Students to the Library," *American Library Association Bulletin* (February, 1958), pp. 104-5.

1957. The students who had availed themselves of the opportunity were stimulated by the attractive, authoritative, and well-written books about scientific and mathematics topics and the lives of great scientists and mathematicians.

AUDIO-VISUAL MATERIALS AND THE GIFTED CHILD

Audio-visual materials are important not only to give the slow learner concrete experiences from which he can learn to generalize but also to help brighter students form and manipulate concepts.¹¹ Audio-visual material has to be geared to the mental capacity of the students. The same film, for example, cannot be expected to serve the needs of all gifted, average, and below average, any more than one set of textbooks can meet all their needs.

The kinds of audio-visual materials available to gifted students will vary with the type of school and community. Maps, globes, charts, and graphs are particularly adapted to the interests of advanced or gifted students. Williams¹² reported a sharp increase in the use of films, recordings, tapes, and transcriptions when the program for the gifted in Portland got under way in 1952.

In case audio-visual materials are not available, it is sometimes possible for gifted students to construct their own. Williams¹³ reports that a group in a school in Portland made a microprojector, an audio-visual device which is ordinarily not available to a classroom. Four advanced botany students interested in preparing microscope slides searched for a means of projecting the slides for group study and discussion. With their focused microscope in an upright position, they removed the eye piece tilted the instrument toward a piece of white paper in a box, placed a two inch square slide as near the hole in the stage of the microscope as possible, and thereby had their micro-projector. Their work was of intense value to the small group, and their general reports to the total class much more meaningful.

A school that has a science center can provide many kinds of equipment and experiences for children interested in science. In

¹¹ Robert F. DeHaan, "Bright Students, Concepts, and Audio-Visual Aids," *Audio-Visual Instruction* (February, 1959), pp. 60-61.

¹² Clifford W. Williams, "Audio-Visual in the Portland Program," *Audio-Visual Instruction* (February, 1959), pp. 62-63.

¹³ *Ibid.*, p. 63.

many cases, a science center and an art center can be combined. Many musical instruments, for example, in their elementary form can be used for not only to understand the fundamentals of music, but also the general phenomenon of sound.

SENSITIVE PROBLEM AREAS

A school that begins a program for educating gifted children will find accentuated many of the problems which have been dormant in its regular program. There is enough controversy over the manner of dealing with the gifted to warrant full discussion and explanation of what the administrator plans to do. It is not enough that the administrator has thought through the policies and program. He needs to provide occasions for his staff and community at large to do the same.

Grading and promotional policies.—Grades are a "sensitive" problem. They may be used for a number of purposes. Grades can be used to show the progress of a pupil as he goes from one topic to another, as well as to show how the youngster stands in respect to other students. They may also be used for feedback information so that the youngster has some knowledge of his progress and can rate himself. Grades can be used to show the youngster how he stands with respect to himself. Because these purposes are not always clearly stated, there is often a great deal of argument about the whys and wherefores of grading.

Grading becomes particularly important in the secondary schools because grades are used so extensively by colleges for admission purposes. The problem becomes critical when special seminars and honors groups are set up. On what basis shall students in these sections be graded?

One possibility is to make no differentiation in the grades in special groups compared with other groups. That is, students in honor sections are marked on a curve, just as students are in any section. This seems undesirable since honor students are a more homogeneous group.

Another possibility is to mark students on the same basis in honor sections that they are in other sections; giving greater weight, however, to their honors grades for purposes of standing in the graduating class. For example, when an A is generally

given four points, a B three points, and so forth, the honor sections may give an A five points, a B four points, and so forth. This will not penalize the student for getting a B in an honor section when he might get an A in a regular section.

A third possibility is to put a floor under the grades in an honor section so that any student getting less than a B will automatically be returned to a regular section.

No matter what the system is, most schools put a special notation on the students transcript of the grade he made in an honor section. This notation indicates that that grade is not a regular one, but is done under the special conditions of an honor section.

The crucial question is to what extent colleges will make use of the information provided in the transcripts and to what extent they will give either advanced placement or credit or both for students who have done work in a special section. Many colleges do give advanced placement or advanced credit. Each school, however, needs to work out arrangements with the university or college that receives most of its students so that students will not be penalized for having taken honors sections.

Articulation.—A particular problem accentuated by programs of educating gifted children is that of articulating the curriculum, as discussed in chapter iv. This is a particularly important problem between grades, between the elementary and junior high school, between junior and senior high, between senior high and college. At each of these points, some disruption is bound to occur in the learning program. By and large, the sequence of the core subjects is pretty well articulated. These problems have been worked out in the past by curriculum-makers. The enriched learning experiences, however, are rarely articulated. Each teacher provides enrichment as best he can generally, without referring to previous enrichment that has been done for gifted children. To provide for articulation of enrichment, fairly adequate records have to be kept of each student's learning experiences and consultation between teachers needs to be encouraged so that each teacher can then build upon the experiences provided by previous teachers.

Maintaining records.—Articulation and continuity of the enriched curriculum depend on good records. The maintenance

of good records is one of the administrative problems with which the principals need to deal. Very often, cumulative records become repositories of dead material that is never used again. In order for it to be used, teachers have to record information that will be of use to other teachers.

In order to increase the usefulness of records, it would help for teachers to record not only characteristics and behaviors of the child, important as these are, but also their own teaching activities in relation to that child. It is as important, for example, to have a record of what a teacher did to encourage a pupil to write a poem as it is to record that the pupil wrote the poem. If a student writes a poem, the teacher should record as clearly as possible what he or anyone else did to establish the conditions under which the student was stimulated to write poetry. If these are recorded, then another teacher can build on such experiences and try to duplicate them himself. Thus, another teacher learns something that is useful from the cumulative folder. He is given important leads about how he can stimulate the student, too. Central files in the principal's office are important for providing records of what the school as a whole is doing for the gifted.

Public relations.—An administrator needs to provide time and the occasion for the community to think about the plans of the school to develop a program for the gifted, just as he does for the staff. Full reports to the newspapers and other mass media help in this respect. Working through the PTA, explaining the program to professional organizations and service clubs is an important way of reaching the opinion leaders in the community and gaining their acceptance of the program.

The bug-a-boo of pressure groups and individuals with an ax to grind confronts many administrators. A program for the gifted often gives such groups and individuals a lever with which to try to move the schools in line with their pet ideas. The administrator needs to formulate his program carefully and gain the support of the faculty and supervisors as well as the community as a whole. Such support can help him withstand unhealthy pressure groups.

Parents who are pushing their own children—gifted or not—

into the program are another source of irritation in public relations. Explaining the criteria of selection, discussing the hazards of pushing a child beyond his abilities with the threat of possible failure, and explaining that the school desires to do the best it can by each child may help to allay their anxiety. Perhaps such parents can be invited to visit a class and observe the work of outstanding children. This observation may give them ample background against which to evaluate the performance of their own child.

QUESTIONS FOR STUDY AND DISCUSSION

1. What are the major administrative problems in educating gifted children?
2. Describe in detail how the attitude of the administrator toward the gifted is reflected in the program of his school.
3. How does the size, wealth, and structure of the community influence the kind of program for the gifted that the schools can establish?
4. Make up a budget for the gifted-child program for a school system with which you are familiar.
5. How can a principal encourage and motivate a teacher who feels so heavily weighted down with the regular classroom activities that she cannot provide educational experiences that the gifted child needs?
6. How much should parents be involved in what is being done for and with their children? What kinds of help can be expected from parents and from the community?
7. What are the more important qualifications for teachers of the gifted? What kind of training should they have?

tion to evaluate the effectiveness of his program for gifted children. The board of education wanted to know whether to expand the program or whether it should be dropped. The administrator was faced with the problem of collecting facts for his report. How should he proceed?

RESEARCH BY TEACHERS, COUNSELORS, AND ADMINISTRATORS

Teacher A decided that something had to be done about the reading situation in her room. She realized she had to define the problem as clearly as possible. After considerable thought, she decided that the basic question was, "Under what conditions do children of different ability gain or lose interest in reading?" Next, she tried to reconstruct the conditions that had pertained in the early part of the year, when everyone was interested in reading. She believed that their early enthusiasm was more a result of the motivation the children brought into the school than *anything she had done for them. Had her concern to make the instructions clear for the slow learner had any effect on other children, she wondered.*

In order to answer this question, she decided to vary her method of giving instructions in different ways and to observe carefully what happened to the children as a result. She began by lengthening her instructions so that the slowest child in the class could understand them. After doing this once or twice, she noticed that not only the bright children were bored, but even the average and somewhat below average children became restless. This confirmed her suspicion that the length of the explanation time had made a difference on the motivation of the children.

Next, she shortened her explanation. She noticed that the below average and average children began to pep up although the very slowest child seemed still to be confused, and there was still no positive reaction from the bright youngsters. She then removed some of the visual aids and charts that she had used and immediately she noticed a quickening of interest in the bright girl, although the gifted boy still did not show a great deal of interest. Some of the average and below-average children began to be somewhat confused, and unable to proceed.

The positive response from the bright girl led the teacher to take a drastic move. She told the girl and the boy that they did not have to sit through the instruction period but could go immediately to work in their books. The results were remarkable. Immediately the two bright youngsters forged ahead in their reading. They passed the reading tests later with flying colors and pushed the teacher to give them more and more reading.

Having come to the conclusion that the bright youngsters did not need to have an extended instruction period, the teacher began to invite other youngsters to go ahead with their work as soon as they had a clear understanding of what had to be done.

Fifth-grade Teacher B, who was concerned with the poor arithmetic achievement of his gifted pupils, was reminded of a psychological experiment he had read while in college. He referred to one of his old college textbooks that contained a report of the study. In the experiment, rats had been used to study the effects of early rearing conditions in their learning. One group of rats was brought up in a complex environment in which they could climb over and push around a number of plastic objects. The second group of rats was brought up in a very restrictive environment in which they had nothing to manipulate. The learning situation consisted of learning to run a maze under two conditions—light and darkness. The first group of rats was found to be swift but careless when it came to running the maze in the light. They made mistakes and overran the corners many times. The second group of rats was a cautious group and traversed the maze in the light without making mistakes, although they were slower than the first group. When they ran the maze in the dark, however, a much more complex task, the first group of rats outstripped the second group. Here their boldness paid off whereas the caution of the second group of rats slowed them down and restricted them in learning the more difficult maze situation.

The teacher thought this experiment might have implications for his own classroom. It hinted at the fact that the arithmetic task might be too simple for the brighter students and, therefore, they worked fast but carelessly and made unnecessary mistakes. The slow children, however, did well on the easier problems be-

cause their caution paid off for them. From this the teacher developed a hypothesis that slower youngsters would do better on easy arithmetic problems but the brighter youngsters would do better on more difficult problems.

The next arithmetic test that the teacher devised contained two parts. A difficult section and an easy section. The teacher determined that, if this test confirmed his hypothesis, he would try to find out how much complexity in arithmetic his brighter students could handle.

Teacher C, who had the underachieving boy, decided that he needed more data about the boy's past. The teacher had read the educational literature about underachievers and recognized that the problem was usually a longstanding one and did not just occur overnight in junior high. He began by interviewing the boy. He asked him what he liked and disliked about school, how he had done in elementary school, what went on at his home, what kinds of things he considered important for his life. The teacher made a visit to the parents and talked about their values for the boy and what things they wanted for him. The teacher also interested the junior high school counselor in the boy. The counselor gave the boy a number of aptitude tests and achievement tests. The achievement tests showed that his achievement on objective tests was comparable to his aptitude. Only in the matter of grades was he below par. The teacher and the counselor talked over the data that had been collected through the teacher's interviews and by the counselor. They looked for hints and clues that would give them insight into why the boy showed no interest in performing well in the classroom. They found that there had been a noticeable decline in the boy's grades in the sixth grade and that already in the third grade, teachers were noticing his restlessness in class and his long lapses of attention. The teacher and the counselor also noted that the boy's life was deficient in adult models who were interested in his academic career. His parents were only lukewarm to his schooling. Nobody was really concerned about the boy's doing well in school. With this important clue, teacher C went to work to try to discover an adult who could naturally be involved with the boy and pay attention to this aspect of the boy's motivation.

Counselor A from the high school was interested in the appropriateness of colleges for the students. He was presented with a research problem that involved the collection of data over a long period of time. He began by getting the names, the high school grades, aptitude test scores, on all graduates for the last five years who had gone on to college. He also gathered information on the grades that these students had made in college. Next, he rated the colleges to which the high school sent most of its students in terms of the level of ability of the students who were accepted in each college. He sent questionnaires to the colleges and asked for information on the academic program and social life of the college. From this he tried to obtain an estimate of the amount of pressure that would be applied on students in each college. For those colleges with which he was not acquainted, the counselor made a personal visit, and tried to sense the temperament of the college by talking with students, faculty members, and administrators of the college. The counselor also interviewed the present high school students who planned to go on to college to try to ascertain what they expected from college. With all this information on hand, the counselor tried to establish a method for predicting in the case of a given student, how well he might expect to do at any given college on the basis of how others like him had done.

Administrator A, who was being asked to evaluate his progress, recognized that the first thing he had to do was to establish criteria of success for the program for gifted children in his school system. These he already had in the objectives that had inaugurated the program. Using the objectives as a starting point, he next asked himself what data had to be collected to determine whether or not the objectives had been attained. He used questionnaires sent to parents of gifted children, interviews with the gifted children, test scores in areas of achievement as well as aptitudes, and case studies of selected children. He also found out which children had dropped out of the program and made particular note of adverse comments about the program from parents.

With this information, the administrator wrote his report, noted the weaknesses of the program and made recommenda-

tions for correcting them. He also recommended doing a pilot study on the value of special grouping and acceleration compared to classroom enrichment.

THE MEANING OF RESEARCH

With these illustrations of educational research in mind, let us look at some questions about research.

WHY DO RESEARCH?

Why should teachers, counselors, and administrators be concerned with scientific research in the field of educating gifted children? Research needs to be done because wise decisions must be made concerning the education of academically talented children. Research findings and data can contribute to the soundness of these decisions. This reason for doing research is particularly well illustrated in the high school counselor who had the problem of finding the right college for the bright students.

The second reason for doing research is to satisfy one's curiosity about things. None of the teachers in the illustrations above would have done research if they had not had some curiosity about the problems that pressed them.

Still a third reason for doing research is that science has such a prominent place in our modern world that to be completely unsophisticated in the scientific method today is to be unable to understand a very important part of contemporary society.

KINDS OF RESEARCH

Some of the basic kinds of research are illustrated in the above examples. Teacher A, with the problems in her reading class, was making use of what has been called *action research*. Action research is the attempt to improve the existing process by studying it and varying it. The results of action research are fed back immediately into the process that is being studied in order to improve it. Thus, the teacher made use of her results by making changes and improvements in her teaching methods.

The fifth-grade teacher employed an *experimental method* in which he used two contrasting groups and two contrasting

procedures. Such experimental procedures are very difficult to conduct in the usual school setting because there are so many variables that enter into the given situation that it is hard to control the most important ones.

The high school teacher used the *case study* method. This method is particularly appropriate in the study of individuals in an attempt to ascertain what factors are important for development of given persons.

The high school counselor used what is called the *correlational method*. He tried to see what relationship various factors had to the success of a student in college.

The administrator conducted what is called *survey research*. It was his job to find out what was going on in his school in regard to a given population of children. He used the kind of techniques that are applicable to survey research.

CHARACTERISTICS OF GOOD RESEARCH

The examples of research given also illustrate some criteria of sound educational research methods. Knowing these criteria is important for both the producer and the consumer of research.

1. A survey of research literature is important. Research should not be undertaken until the researcher has become aware of previous studies of the same or similar problems. He may find that someone else already did the research he contemplated. Surveying the literature will also reduce the possibility of repeating errors made by those who have already studied the problem.

2. A clear statement of the problem needs to be made. The first-grade teacher among the examples above was wise in spending time thinking through the nature of the problem with which she was faced. Stating the problem as she did made it possible for her to do research on it.

3. Operational definitions need to be established. A person who wants to do research has to define and describe very clearly what he did. The high school, for instance, counselor had to take particular care to describe the most important variables among his subjects, such as their socioeconomic level, sex, and some measure of their ability to hold up under pressure.

4. Adequate control groups need to be established. This characteristic of good research is particularly important for Administrator A who recommended doing a pilot study of the effects of special grouping, acceleration, and classroom enrichment. In order to determine the success of such methods, he would need to establish a control group which did not share any of the special treatment the others received and which would be used as a comparison group at the conclusion of the study.

5. The research should be done in such a way that generalizations from a given study can be made to other populations of children in other situations. The high school counselor recognized this. He was interested not only in the particular students that he was studying but also in generalizing what he found out from them to future students from his school who would apply to colleges.

6. Adequate sampling measures need to be established. This characteristic is particularly important if results are to be generalized to another situation.

7. The methods of collecting data should be objective. The experiments should be conducted in such a way and described so clearly that another researcher or teacher knows exactly what was done. Private hunches, subjective guesses, and inside information are ruled out as scientific evidence, since they cannot be reproduced by others.

8. The data collected should be as precise as possible. Preferably they should be quantitative, such as I.Q., achievement scores, and grade level. Qualitative data might be a case study, an interview, or a teacher's description of a student.

It should be clear from the foregoing that the scientific method is a somewhat relative procedure. No absolute distinction can be drawn between the methods and logic used by pure scientists and laymen's observations and logic. Science is the attempt to observe and think according to certain rules of procedure, to reduce uncontrolled, unsystematic observation and prejudiced, biased thinking. But a procedure is neither absolutely scientific or unscientific. Rather, one method may be *more* scientific or *less* scientific than another.

THE SCHOOL AS A PSYCHOLOGICAL LABORATORY

Who should be responsible for research in the school setting? The most logical persons are the school psychologist, guidance personnel, and curriculum-co-ordinators. The training of psychologists and counselors is such that it deals with training and research techniques. They are particularly interested in some of the psychological aspects of education, as for example in underachievement. The psychological aspects are some of the most important researchable questions.

Curriculum specialists are also interested in aspects of research. Their interest often lies in the problems of the effectiveness of various teaching procedures. It might be that the kind of research that they would do would be in the field of methodology and curriculum rather than in the psychological aspects.

What role does the teacher play in research? The teacher may be required to make observations on particular youngsters; she may be asked to rate the achievements or other performance of varying children and to describe in detail the kinds of teaching techniques, particularly if it is an experimental study.

Many benefits other than those already mentioned accrue to the school system whose educators are participating in research efforts. It introduces an atmosphere of rigorous thinking on educational matters. It is all too common for educators to engage in wishful thinking about what they hope is going on rather than what can actually be observed. It is difficult but desirable for teachers to translate educational clichés into operational definitions that can be applied in a research project. Research programs also serve as good inservice training for teachers.

RESEARCH FINDINGS FOR THE SCHOOL SYSTEM

Research findings of various kinds are used at different levels in the total school system. As already mentioned, the board of education uses research findings in making educational policies.

It is important for the superintendent to set up procedures for doing so. In making this report to the board of education, the superintendent gives the findings from surveys of facilities, personnel available, community attitudes, costs, and what is being

done in other school systems. These become the data which are used in planning and recommending programs for talented children as well as for other children.

At the departmental and supervisory levels, research can be used to study the *differereoces* in projected programs. It is at this level that research dealing with the effectiveness of various grouping procedures and other administrative devices can be carried on.

At the level of the local school, research can help the principal answer the question whether the school offers the kind of educational program that approximately matches the pattern of the vocational and educational desires of the students. In other words, is the school offering what its graduates need? Is the depth of offering consonant with the ability of the talented students?

In the guidance area, research can be used to predict the effects of proposed programs of education on given students. With the knowledge of the students that is available from data collected by guidance personnel, it is also possible to predict with some degree of success what effect *varying* kinds of programs will have on the students. With the guidance department, under the supervision of the principal, also lies the problem of identifying and classifying talented students and keeping cumulative records on them.

At the level of the classroom teacher, research is an important way of ascertaining the characteristics of gifted children, the implications of these characteristics to curriculum and teaching methods, and the effectiveness of the total classroom program on developing talents of children in her classroom.

CAUTIONS IN THE USE OF RESEARCH FINDINGS IN THE SCHOOLS

A particularly important problem in educational research is what might be called the "Hawthorne effect." The Hawthorne effect gets its name from early experiments done in industrial psychology at the Hawthorne Plant of Western Electric Co. An attempt was made to ascertain whether improved lighting conditions, improved ventilation, increased rest periods, and improved social conditions and facilities would increase the output

of industrial electrical workers. The experimenters discovered that no matter what they did, productivity of the workers increased over those of the controls. The conclusion reached was that the very fact of being subjects in an experiment was stimulating to the workers and caused an increase in productivity. This is called the Hawthorne effect.

The Hawthorne effect operates in educational research, too. The very fact that teachers and pupils know that their group is participating in a research project is sufficient to increase their achievement. This effect was noted in the Evanston, Illinois, study described in chapter vi. When positive experimental findings are instituted, the changed curriculum or teaching methods that seemed to operate effectively in the experimental program seem to die out soon. As the novelty wears off, the achievement drops.

The second caution is that research findings are not the only basis for making educational policy. Some important decisions about desirable education for talented students must be based upon philosophical considerations and value judgments as well as upon empirical research findings. Common sense, philosophical considerations, and value judgments should not be belittled as bases for making decisions and settling issues. Long-established practices and policies should not be lightly discarded on the grounds of limited research findings. It is necessary to respect the "wisdom of the ages" in regard to educational matters. Research findings, however, can help implement the "wisdom of the ages." The emphasis should be upon a balanced use of as many legitimate bases as possible in the making of educational policies and decisions.

EVALUATING GIFTED CHILD PROGRAMS

Below is a "score card" developed by Gowan¹ to be used to evaluate school programs for able youth. Another guide for rating provisions for the gifted has been published by Passow.²

¹ John C. Gowan, "The California Criterion Scorecard of Efficacy of Structure and Function in the Evaluation of Programs for Able Youth," Northridge Calif.: San Fernando Valley State College. (Mimeographed.)

² A. Harry Passow and Deron J. Brooks, Jr., "A Guide for Rating Provisions for the Gifted," New York: Bureau of Publications, Teachers College, Columbia University, 1960.

Directions for using this Scorecard: Below are 25 items, 20 of which apply to both elementary and secondary schools, and the last five of which apply only to secondary schools. Each item has four parts; each part can be answered "yes" or "no." For each part answered "yes," one point is added; each item hence has a potential value of zero to four. It is suggested that 2 is the average score per item, that 4 represents progress at standard deviation or more above the average, and that 0 represents the opposite with intermediate scores in proportion. Or the totals may be added and compared to a perfect score of 100 for secondary and 80 for elementary schools.

1. *Public and Professional Interest*

- .1 Public interest has been shown by a lay committee which has been in existence for a year and made a report to the Board of Education.
- .2 There has been co-operation between lay and professional staff as shown by (a) public meetings with professional staff participation, (b) a continuing joint lay-professional committee.
- .3 Marked public support of the program is indicated by a) letters to and articles in the local press, b) the involvement of a service club, c) other specific evidence of public interest.
- .4 Professional community members have offered their services in co-operation with any phase of the program.

2. *Action of the Board of Education*

- .1 Have devoted meeting time to subject, and promoted public interest.
- .2 Have voted funds for an experimental program.
- .3 Have voted funds to an amount equaling 1% of total school budget or \$100 per child.
- .4 Have increased the appropriation for the program.

3. *Administrators*

- .1 Have been permissive in allowing interested staff to experiment.
- .2 Have taken lead in bringing in speakers and consultants.
- .3 Have provided inservice training.
- .4 Have spoken publicly in favor of a strong program.

4. *Community Relations*

- .1 There is a program of public information as represented by a pamphlet, bulletin or other document for public release.
- .2 A supervisory leader is directly involved at least half time in the program, and makes public statements.
- .3 Articles about the program appear in the local press.

Evaluation and Research on the Education of the Gifted

- .4 Expert consultant help from outside the district has been used.
5. *The Staff and Teaching Personnel*

- .1 Are involved and show interest and ingenuity in adapting the program.
- .2 Have produced a handbook, pamphlet or mimeographed material.
- .3 Have in a majority of cases had inservice training.
- .4 Include at least one person who has written an article for a professional journal about the program or reported it at a convention.

6. *Staff Allotment*

- .1 At least 1 person in the central office is there because of the program.
- .2 There is at least one extra reserve teacher, teacher-consultant or the time of one teaching position allotted to teach the program.
- .3 Additional psychometrist or counselor time has been allotted.
- .4 A definite earmarked budget exists for supplies, material, books.

7. *Curricular Adaptations include*

- .1 Acceleration.
- .2 Grouping in special classes.
- .3 Special enrichment work for the highly gifted.
- .4 A comprehensive program from kindergarten through grade 12.

8. *Teachers*

- .1 There is at least one extra teacher per hundred gifted students.
- .2 There has been at least one year of special inservice training for a majority of teachers in the program.
- .3 The average special class has less than 25 children in it.
- .4 Teachers are carefully selected for the program on a basis of competence, interest, and training, not as a result of school politics or status.

9. *Administration of the Program*

- .1 One trained individual has over-all responsibility for the program.
- .2 This person is actively advised by a volunteer committee of teachers and central office representatives.
- .3 The program is comprehensive in extending through all grades.
- .4 There is an advisory lay committee.

10. *Guidance Services*

- .1 Is headed by a person, specially credentialed, or with a master's degree in guidance, or both.

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- .2 At the secondary level includes a specialist in college placement and scholarships; at the elementary level includes at least a half-time guidance counselor in every elementary school.
 - .3 Involves a ratio of counselor to students of not more than 1/300 in secondary school, 1/500 in junior high school, and 1/900 in elementary school.
 - .4 Has space for interview privacy, and each gifted child receives at least one private interview per year.
11. *Identification*
- .1 Ability and achievement testing is given at least every other year.
 - .2 Multidimensional criteria, including teachers' recommendations are used in the selection process, but final judgment is in the hands of the committee.
 - .3 Time and personnel for individual testing is available.
 - .4 Provision is made for locating the gifted child who may be hidden by reason of lack of reading skill or by minority group status.
12. *Regarding the Library*
- .1 There is opportunity during lunch hour for students to read in a library.
 - .2 Students under certain circumstances may go to the library during class period and before or after school.
 - .3 Positive action, including visitation, is taken to acquaint students with library facilities both in the school and in the community.
 - .4 Research is encouraged by librarians who are interested in the able, promote a friendly library atmosphere, waive restrictions regarding types and numbers of books which can be withdrawn, and give instruction in library methods.
13. *Program*
- .1 There is a summer program for the able.
 - .2 There is an advanced placement program in high school and an acceleration program in elementary school which accelerates 1% of the total school population by the time they enter junior high school.
 - .3 There are remedial skills programs in reading and mathematics for which gifted children are eligible.
 - .4 There is scheduling flexibility as seen in the secondary school by seven or more periods per day, or in the elementary school

by released time provisions for gifted students to have out-of-class experiences.

14. Program Specifics

At Elementary Level:

- .1 Algebra before ninth grade.
- .2 Phonics and grammar
- .3 Mathematics enrichment involving higher arithmetic, number theory
- .4 Science enrichment

At Secondary Level:

- .1 7 years of math, and science
- .2 4 years of English and 3 of social studies
- .3 At least 6 compositions per semester in English
- .4 17 solids in high school.

15. Program Specifics

- .1 Laboratories open for student work in both high school and junior high school, science demonstrations with lab equipment in elementary school.
- .2 Club and interest activities are sponsored and encouraged.
- .3 Three years of foreign language in secondary school, some language experience below the ninth grade in elementary school.
- .4 Prestige is accorded for activities other than athletic.

16. General School Atmosphere

- .1 There is a tradition of scholarship, fostered by the faculty.
- .2 There is an effective guidance service.
- .3 There is good faculty morale and cooperation.
- .4 There is a democratically-oriented administration.

17. Reactions of the Gifted

- .1 The reactions of the gifted students to the program have been preserved on paper.
- .2 A majority of them like and approve of the program.
- .3 Their suggestions have resulted in some changes.
- .4 Parents have been acquainted with the program and their views have also been collected.

18. Reactions of Teachers

- .1 There has been a record of teacher reactions to the program.
- .2 The majority of those involved are in favor.
- .3 Their suggestions have resulted in changes.
- .4 Teachers do not feel overburdened as a result of the program.

19. Follow-up

- .1 There is a follow-up service which has resulted in a report during the last two years.
- .2 Time to perform follow-up has been provided.

- .3 Other methods of evaluation have been used.
- .4 Reactions of parents and the public have been recorded.
20. *Behavior Deviations:* During the last two years there has been *more than one* instance of any of the following:
 1. able youngster getting into serious difficulties involving suspension, dismissal, or criminal activities.
 - .2 marked dissatisfaction on the part of the parents of a gifted child.
 - .3 the withdrawal of the able child from school by parents and of dissatisfaction with the program.
 - .4 serious failure on the part of a student to accept the responsibilities of school citizenship not covered in part. 1 (such as psychotic withdrawal, gross negligence resulting in serious damage to property or injury, social maladjustment, serious emotional disturbance, or the like)

(Items from here on apply only to Secondary Schools)
21. What percent of the able students are underachievers? (Underachievement is defined as class work standing one standard deviation or more below the ability level.)
0) over 25%, 1) 18-24%, 2) 13-17%, 3) 10-12%, 4) less than 10%.
22. What is the percent of dropouts among the able grades 9-13?
0) over 10%, 1) 7-10%, 2) 4-6%, 3) 1-3%, 4) less than 1%.
23. What percent of the able go to college?
0) 50%, 1) 70%, 2) 84%, 3) 90%, 4) 98%.
24. What percent of the able take more than 16 solids in 4 years?
0) 30%, 1) 50%, 2) 70%, 3) 84%, 4) 90%.
25. What percent of the able receive scholarships to college?
0) 16%, 1) 30%, 2) 50%, 3) 70%, 4) 84%.

EXAMPLE OF GOOD EDUCATIONAL RESEARCH ON A SCHOOL-WIDE BASIS

An experimental program at DeWitt Clinton High School in New York City² to help bright underachievers attain their level of capacity is a model of a good educational research program in many respects. In the spring of 1956, the principal of the DeWitt Clinton School invited members of the Talented Youth Project of the Horace Mann-Lincoln Institute of School Experimenta-

²Miriam L. Goldberg and Associates, "A Three Year Experimental Program at DeWitt Clinton High School To Help Bright Underachievers," *High Points*, January, 1959.

tion, Teachers College, Columbia University, to co-operate with the school in studying the problem of underachievement. The purposes of the program were clearly stated: (1) to study the academic, personal, and social characteristics of under-achievers; (2) assess the effects of grouping of underachievers in a homeroom section and retaining them as a group in one subject, social studies, taught by their section officer.

The hypothesis to be tested was that if students could share each other's problems and could simultaneously become closely identified with and receive support from a teacher, their general school attitudes, and achievement, would improve.

The characteristics of a teacher needed for such an effect were spelled out. The person had to be warm, outgoing, and above all, had to combine flexibility with the maintenance of high standards.

Underachievement was operationally defined. Students with I.Q.'s of 120 or higher in the ninth grade and averages below 80 per cent in class standing were the subjects for the study. I.Q.'s were verified with additional tests. The students were in the tenth grade at the time of the experiment. Two groups were identified. One of the groups was used as a control class and the other was an experimental special class. In addition, a group of high-ability, high-achieving students was designated. These were the students whose I.Q.'s were comparable to the underachievers but whose grade average in the ninth year grade was above 85 per cent. The experimental, the control, and the high-achieving groups were compared on a number of variables, such as their average ninth-year grades, average age, average I.Q. range, reading arithmetic achievement, positive and negative sociometric rating. The control class and the experimental special class were the same in every respect except that the control group had higher achievement than the experimental class on certain achievement tests.

Characteristics of underachievers were discovered through personal interviews which were electrically recorded. There were more boys than girls. It was discovered that disruption of normal family pattern was much more frequently observed among underachievers. Among the high achievers only one case

of family disruption was found. The general picture of the underachievers was that of low aspiration level in regard to schoolwork and satisfaction with achievement that was just above the failing line. Such students recognize that they are bright and potentially capable, but they offer strong resistance toward making the effort necessary for high achievement.

Methods used in rating the experimental classes were specified, and records were kept of procedures used by teachers in treating the classes. The progress of the experimental classes was evaluated annually over a period of three years. Comparison was made of students who improved and those who did not.

The first teacher was a man who fit the specifications. In describing the techniques that the teacher used, it became apparent that any procedure which could be perceived as rejection acted as a negative motivating force on the boys in the special class. However, sharing the four each day in the homeroom and working in the social studies class together began to generate a feeling of belonging, security, and warmth that the boys had never felt before. The students showed this by being positively enthusiastic, almost to the point of hysteria according to the report, upon their return from the holiday session during the first year. The morale of the group was at a high level.

At the end of the first semester, the teacher reported that many of the boys in the special session had benefited greatly from their association with each other and their close identification with the teacher. He was confident that the semester's experience had a significant, repositive effect on the boys. The grades of the experimental students, however, did not improve more than those of their control groups.

At the end of the first year, an analysis of the final grade showed that the special group improved in all subjects except social studies where they remained the same, while the control group went down in all subjects. The difference was most striking in math, science, and total average. In fact, the special group made up its deficit in all subjects but English.

In the second year of the project, the original male teacher and counselor of the boys could no longer be their teacher. In his place was put a woman teacher who had been eminently suc-

cessful in teaching honors classes for years. The teacher was not encouraged to modify her usual procedure of holding the students to a consistently high level of performance and making no allowances for failure to meet the high standards.

At the halfway point of the second year, the teacher noticed that she and the boys were in conflict throughout the semester. The teacher, expecting high quality of performance was unable to accept the erratic, tardy, and often slipshod work of the students. Her insistence on "toeing the mark" led to even greater resistance which expressed itself in poor work, disturbing behavior in class, constant chatter, and collaboration on the assignments. By the end of the semester, she was convinced that the group should not be kept together.

The evidence at the end of the second year did not support the hypothesis that the underachievers who had shown improvement as a result of a year's membership in a warm, accepting, and flexible group would sustain their gains when held to uniformly high standards, both of conduct and achievement. The important element is apparently the performance of the teacher in utilizing the group's spirit constructively.

NEEDED RESEARCH ON THE GIFTED

The following summary of needed research will pull together much of what has been written in previous chapters. Needed research will be organized into three areas: psychological, sociological, and educational.

PSYCHOLOGICAL RESEARCH

In a previous chapter there was a good deal of discussion about motivation and non-intellectual factors that contribute to high-level performance. Research is beginning to fill out the picture in this field. Nevertheless, motivation is a perennial problem in psychology, and further studies in this area will always be welcome.

A field that is practically virgin territory is the field of how high-level learning takes place. Do very able persons require the same steps in learning as required by slow-learning individuals, or do the fast learners learn in leap-frog fashion?

Can talent be created? Discover the youngsters who have a high level of talents of the simple or non-functional variety, say finger dexterity. Can such a talent serve as a starting point for the development of other more complex and useful talents?

A good deal of progress has been made along the lines of delineating the structure of abilities of high-level personnel. Guilford's factorial studies have led the way in this field. Further studies, however, need to be done to replicate Guilford's work and his studies have to be extended to a much broader sample than the air force cadets which made up his sample. Studies of the structure of abilities will continue to help fill out the portrait of the gifted individual.

In this connection, studies of creative thinking will need to be continued. The conditions in which creativity exhibits itself need to be outlined. At the present time we know very little more than just the peripheral factors of creativity and what are the conditions under which it prospers.

SOCIOLOGICAL RESEARCH

Leadership remains one of the important areas of research to be done on the education of the gifted child. One of the important questions still needing to be researched is the question of why and under what conditions does a group ascribe leadership capabilities to a given individual? Further research needs to be done on the process or mechanics whereby a given individual translates his mental abilities into leadership behavior. Why do some very capable people fail to make this translation? Why are some individuals given credit for more ability than we can objectively measure in them? Still more needs to be known about the route by which a childhood leader or an adolescent leader becomes an adult leader.

Further research needs to be done on the peer relationships of highly achieving gifted children. Is there such a thing as an ideal amount of contact with peers? Does good peer relationship enhance or inhibit high-level performance?

In this connection, it is evident that we need more research also on the relationship between the peer culture and the adult culture. If it continues along present lines, it would appear that

there is a split between these two cultures and that adolescents are attracted more to their peer culture than to the adult culture. Research needs to be done on possible ways of reducing the gulf between the adolescent and the adult culture.

Further studies need to be made on the kinds of families that produce children capable of high-level performance of the kind that Strodbeck initiated. The relative contributions of families and schools need to be studied in terms of their contribution to high-level performance.

EDUCATIONAL RESEARCH

This area of research is primarily of the applied technological nature. It involves translating ideas from research done in the psychological-sociological areas into action, policies, and programs.

A problem to be investigated has to do with the relative importance of developing high ability underachievers versus developing high achieving children with somewhat lower ability. Where will the greatest benefit result?

One research potential is the curriculum. We need to know what kinds of curriculum produce leadership, creative thinking, high motivation.

Further research needs to be done on the relationship of the teacher to the learner and the learning process when the learner is a person of high intellectual capacity. What does the teacher contribute in such a process? It might be fruitful to apply constructs used in the study of leadership to the teacher, and in such a study the teacher would be considered a leader influencing the behavior of the students.

There are many new developments taking place in the field of education. Among them are such things as automatic teaching devices, teaching by means of television, and national testing programs. The effects of these upon the education of gifted students needs to be studied. Are there some things that gifted children can be taught by means of teaching machines? Can these machines help differentiate between the learning processes of bright pupils as compared with other pupils?

QUESTIONS FOR STUDY AND DISCUSSION

1. Compare scientific method with ordinary observation and common sense.
2. What are the pitfalls of relying exclusively on research findings in making educational decisions? What are the dangers of ignoring research findings?
3. Make a list of questions you would like to have answered by research.
4. A principal wants to know how many gifted children he has in his building. How should he proceed to find out?
5. Rate the gifted child program in your school, or in a school you know, using the form given on pp. 284-88.
6. To what extent should schools generally carry on more research than they are now doing?

The Extremely Gifted Child

One often hears the opinion expressed that bright children are often "queer," and parents sometimes say, "I'm glad I don't have a genius for a child." Perhaps we should examine the differences between what we have called the first-order and the second-order gifted children.

In the studies that have been made of children of high intelligence it has been generally found that such children are on the whole superior in personal adjustment to average children. Gertrude H. Hildreth compared fifty gifted children with a control group of average intelligence and found the gifted children to possess superior character and personality.¹ Terman and Oden found their gifted children to be well adjusted socially both in childhood and after they had grown up.² Moreover, in comparing the people in their study who possessed the highest I.Q.'s with those of relatively lower I.Q.'s (though still well above average), they did not find more maladjustment among those with the highest I.Q.'s. On the other hand, Leta S. Hollingworth claimed that children of very high I.Q.—180 and over—are likely to have special problems of adjustment.³

¹ "Characteristics of Young Gifted Children," *Journal of Genetic Psychology*, LIII (1919), 287-311.

² *The Gifted Child Grows Up* (Stanford, California: Stanford University Press, 1947).

³ *Children above 180 I.Q.* (Yonkers-on-Hudson: World Book Co., 1942), pp. 274-75.

Our opinion in this matter is that the child with a very high I.Q., the one in a thousand, is more likely to have special personality problems than the child with second-order talent, the one in ten. We have distinguished between the first-order gifted child, whose I.Q. is 160 or 180 or even 200, and the second-order gifted child, with an I.Q. of 125 to 160.

Generally speaking, the bright child with an I.Q. ranging from 125 to 160 achieves a good social adjustment. He has enough brain power to overcome the ordinary problems of social adjustment and not enough to introduce the unusual problems of the genius. For example, Gertrude Hildreth compared three gifted boys who attended a school in which the average I.Q. was quite high. Two of the boys, with I.Q.'s of 135 and 145, were happy, friendly, and popular boys, recognized as leaders by their agemates. They were well above average in intellectual ability for that particular school. The third boy, with an I.Q. of 175, had difficulty in social adjustment even after he was accelerated at the end of the fourth grade.

Observed with others in his group when he was seven, he appeared to be larger, heavier, of stockier build, and broader in the face than his classmates. He was also quicker in movement and more energetic than the others. The boy showed great initiative. Very early he tended to dominate any situation, shoving others aside in dictatorial fashion saying, "You can't do that," or laying down the law to his classmates. At the age of eight he was described as dictatorial, insistent on having his own way, inclined to precipitate a fight when controversy arose. His high shrill voice frequently had a note of irritation as he tried to argue his side of the case, and he was not always inclined to take the blame when he should.

One day when he irritated the children by being too bossy, they gave him the "Heil Hitler" salute and dubbed him "Adolf Mussolini." Later he learned to be more diplomatic in handling his associates. He was inclined to be somewhat selfish in demanding things he needed when he needed them, for his own needs seemed more important to him than anything else. He was not a thoughtful child. On one occasion he took another child's paper without realizing what he had done. He was also inclined to be careless in the use of materials, setting low standards for himself; and inclined to be irresponsible about his personal possessions and his committee work.

Occasionally he became over-confident, leaned back and did a care-less job; but when his mother or teacher stood over him results were excellent. He was slow in developing a sportsmanlike attitude in games. In the lower grades the others rated him as "lousy in games and slow and doesn't use his brains." He tended to lag behind others in the development of the skills such as those required in ac-tive games and sports.

Teachers confessed that they were baffled to know what to do for a child with a mind so mature. They would say with a note of despair: "He knows all the work we're having, yet he is so young and even immature in some respects." When the boy was nearing eleven, teachers observed that he was a curious mixture of keen intel-lect and infantile emotional reactions. They recognized that this boy offered a challenge that even the best of them were unable to meet in regular school classes even when most of the children were rapid learners. Acceleration in grade placement did not take care of this remarkable boy's need for advanced school work.⁴

The extremely gifted child has little intellectual activity in common with his agemates, and this fact may serve to estrange him from them in other respects. When mental development is more than 50 per cent above social or physical development, as is generally true when the I.Q. exceeds 160, the child is particu-larly subject to personality difficulties.

The basic reason the child in the second order of the gifted can make use of his intelligence to enhance his personal and social adjustment is that his intellect is not too far out of step with his physical and social development. We may speak crudely of a "social quotient" (S.Q.) and a "physical quotient" (P.Q.) to designate the levels of social and physical development achieved by a person. The child of superior intelligence is likely (in the statistical sense) to be socially and physically above average, also—perhaps to possess an S.Q. and a P.Q. of 110 to 120 or higher. The combination of advancement in these areas with intellectual advancement is productive of good social ad-justment, provided the intellectual advancement is not too high.

There is considerable evidence that the *second-order gifted* child sees himself much the same as the average child does. Thus,

⁴Gertrude Hildreth, "Three Gifted Children: A Developmental Study," *Journal of Genetic Psychology*, LXXXV (1954), 256-57.

Ruth Strang studied the compositions of adolescents in grades 7 to 12 on the topic "How It Feels To Be Growing Up."⁸ She compared those with I.Q.'s over 120 to the remainder of the group. This abler group was a second-order gifted group. They gave responses in many categories with about the same frequency as those of the average group. They expressed as much "dissatisfaction with own body changes or status," "satisfaction concerning relations with parents," "desire for a particular vocation," "concern with scholastic success for grades," "concern with making friends, getting along with people," and "concern with problems of morality or religion." On the other hand, the brighter group expressed the following attitudes more frequently than the average group did: "satisfaction with own body growth, or status," "satisfaction concerning relations with peers" as well as "desire for greater acceptance with peers," "concern with boy-girl relations," and "interest in sports."

These differences might indicate a more pervasive interest in social relations by the brighter adolescents and probably a somewhat better general social adjustment by them than by the average boys and girls. In the following two areas there was a markedly greater expression by the brighter adolescents: "enjoyment of voluntary reading" and "desire for secure world peace." This indicates the greater interest by the abler students in reading and in the more abstract and general problems of society.

From such data as these one can conclude that the second order of the gifted are in pretty close touch with their average peers, although observably different from them in certain of their attitudes.

If the second-order gifted child has a problem, it is likely to be a problem of seeing himself as a really able person who can perform very well in adulthood. In the present American social environment and in the present American school it is easy for the one in ten to identify himself with the average rather than the outstanding. It is easier for him to go along with peer-group standards of intellectual performance, to get a "gentleman's C,"

⁸ *Gifted Adolescents' Views of Growing Up*, *Journal of Exceptional Children*, XXIII (October, 1956), 19-25.

than to see himself as one who has great ability and can fill a distinguished place in adult society.

For example, consider the case of Mike, related in chapter i. This boy has an I.Q. of about 130 and is talented in graphic art. Throughout his elementary school years he has been seen by teachers and agemates as an ordinary boy, about average in leadership ability. The only unusual thing they notice about him is his high reading ability. He likes blood-and-thunder movies, reads comic books, and sets great store by his motor scooter. His seventh-grade teacher said of him, "Mike here has an I.Q. of 132, . . . but he is not *that* bright." Mike's father is a manual worker, and neither parent expects him to do more than finish high school, which is more than they did. He gets little stimulation at home.

Nobody around Mike sees him as a potentially remarkable person. Whatever artistic talent he may have goes largely unnoticed. His reading ability is just a source of pleasure to him. Mike will be just an ordinary man, unless something happens to give him a different conception of himself.

The extraordinarily gifted child, on the other hand, whether his talent be intellectual or artistic, lives in a situation where one aspect of his life is very much further developed than any other. For instance, an intellectual genius may have the mental ability of others twice his age, but he will never get this far ahead in physical or social development. A few such children are physically large and precocious or socially advanced as much as a year or two over their chronological agemates but seldom more than that. Similarly, children who are extraordinarily talented in special areas are not notably advanced in physique or social development.

Consequently the highly gifted child is always faced with the problem of *discrepancies in his life*—discrepancy within himself and discrepancy between himself and his companions, of whatever age they may be.

FAMILY RELATIONS OF EXTREMELY GIFTED CHILDREN

Among the three hundred men of genius studied by Catherine M. Cox, a group of twenty, all rated by Cox as having an I.Q.

of 160 or more, were selected by Harold McCurdy for special study.* From the biographical material on these men, McCurdy drew certain conclusions about their family backgrounds: "In summary, the present survey of biographical information on a sample of twenty men of genius suggests that the typical developmental pattern includes as important aspects: (1) a high degree of attention focused upon the child by parents and other adults, expressed in intensive educational measures and, usually, abundant love; (2) isolation from other children, especially outside the family; and (3) a rich efflorescence of fantasy as a reaction to the preceding conditions."*

Fifty-five per cent of McCurdy's group did not marry at all. Some delay or reluctance or dissatisfaction attended the marriages of Mill, Goethe, Coleridge, Mirabeau, Wieland, and perhaps Melancthon, leaving only three out of twenty who might be said to have had "normal" marriages. Two of the brief sketches by McCurdy follow:

Johann Wolfgang von Goethe (1749-1832).—Throughout his childhood he was carefully and energetically supervised in his varied studies by his father. He associated frequently with numerous skilled and learned and eminent men in Frankfurt, among whom was his grandfather Textor. He enjoyed considerable freedom of movement through the city in the intervals of his studies, and he struck up several acquaintances outside the home among boys and girls; but these were certainly far outweighed by his adult contacts, and by his intimacy with his sister, who had much less freedom than he and who became increasingly embittered by the educational discipline imposed by their father. In his autobiography Goethe notes that he was not on friendly terms with a brother three years younger, who died in childhood, and he scarcely retained any memory of the three subsequent children who also died young. How close he and his sister were may be gauged by these words regarding the after-effects of his love affair with Gretchen, at about fourteen: "My sister consoled me the more earnestly, because she secretly felt the satisfaction of having gotten rid of a rival; and I, too, could not but feel a quiet, half-delicious pleasure, when she did me the justice to assure me that I was the only one who truly loved, understood, and esteemed her."

*Harold G. McCurdy, "The Childhood Pattern of Genius," *Horizon*, II (May, 1960), 33-38.

may no longer accept what they have told him, but must measure it by his own imperfect criteria of judgment.¹

The genius does not grasp human relations much ahead of his age. However early he may learn to read the word "reputation," for instance, he is not likely to understand what makes a person's reputation until he has had appropriate experience in seeing people judge other people. The word "democracy" will get its full meaning for him only as he associates with his equals in deciding matters of common concern. The meaning of love between the sexes will not become clear to him earlier than to his age-mates.

Thus, genius is fragmentary and throws its possessor into the dilemma of talent versus immaturity. On the one hand he is capable of associating intellectually with people twice or thrice his age; on the other hand he is, at most, capable of interacting socially in a mutually satisfying way with people no more than a year or two advanced over his own age. Furthermore, his motor development and his skill in using his hands are likely to be only average for his age, or even somewhat retarded because of lack of training. John Stuart Mill, who was educated by his father and had little or no play with boys his own age, describes this dilemma in his own case:

It is evident that . . . the purposes of my father's scheme of education could not have been accomplished if he had not carefully kept me from having any great amount of intercourse with other boys. He was earnestly bent upon my escaping not only the corrupting influence which boys exercise over boys, but the contagion of vulgar modes of thought and feeling; and for this he was willing that I should pay the price of inferiority in the accomplishments which schoolboys in all countries chiefly cultivate. The deficiencies in my education were principally in the things which boys learn from being turned out to shift for themselves, and from being brought together in large numbers. From temperance and much walking, I grew up healthy and hardy, though not muscular; but I could do no feats of skill or physical strength, and knew none of the ordinary bodily exercises. It was not that play, or time for it,

¹ *Ex-Prodigy: My Childhood and Youth* (New York: Simon & Schuster, 1953), p. 81.

was refused me. Though no holidays were allowed, lest the habit of work should be broken, and a taste for idleness acquired, I had ample leisure in every day to amuse myself; but as I had no boy companions, and the animal need of physical activity was satisfied by walking, my amusements, which were mostly solitary, were in general, of a quiet, if not a bookish turn, and gave little stimulus to any other kind even of mental activity than that which was already called forth by my studies: I consequently remained long, and in a less degree have always remained, inexpert in anything requiring manual dexterity; my mind, as well as my hands, did its work very lamely when it was applied, or ought to have been applied, to the practical details which, as they are the chief interest of life to the majority of men, are also the things in which whatever mental capacity they have, chiefly shows itself: I was constantly meriting reproof by inattention, inobservance, and general slackness of mind in matters of daily life. . . . The education which my father gave me, was in itself much more fitted for training me to *know* than to *do*. Not that he was unaware of my deficiencies; both as a boy and as a youth I was incessantly smarting under his severe admonitions on the subject. There was anything but insensibility or intolerance on his part towards such shortcomings: but, while he saved me from the demoralizing effects of school life, he made no effort to provide me with any sufficient substitute for its practicalizing influences. Whatever qualities he himself, probably, had acquired without difficulty or special training, he seems to have supposed that I ought to acquire as easily. He had not, I think, bestowed the same amount of thought and attention on this, as on most other branches of education; and here, as well in some other points of my tuition, he seems to have expected effects without causes.*

In the genius we must suppose that the brain has outstripped the rest of the body in development, causing a discrepancy between mental performance on the one hand and physical and social performance on the other hand. Although there is nothing inherently unhealthy in this discrepancy, the fact that other people are not this way creates a difference between the genius and other people which can never be entirely overcome in the developmental years.

* John Stuart Mill, *Autobiography* (new ed.; London: Longmans, Green & Co., 1908), pp. 20-21.

THE PROBLEM OF ACHIEVING IDENTITY

The talented child, like all others, must perform the tasks of growing up to manhood or womanhood and may have special difficulties because of the imbalance of his development as well as because of his great potentialities. His immense ability may create for him a "conflict of riches," among various possible choices for personal development and for vocation. This is seen clearly in the problem of identity formation.

The major task of adolescence is to achieve an identity. Before adolescence the child has no real identity of his own. He is to some extent his father and his mother. He is at times a person of glamor, such as a baseball player, a movie star, a great actress. He does not yet know what kind of adult he wants to become. During adolescence he gradually discovers and establishes his own identity.

Identity-achievement means finding a niche in some section of society, a niche which is firmly defined and yet seems to be uniquely made for the individual. In finding it, the young adult gains an assured sense of inner continuity and social sameness which will bridge what he was as a child and what he is about to become and will reconcile his conception of himself and his community's recognition of him.*

The task of achieving identity is accomplished without great difficulty by the average person, but the gifted person may have a special problem here. Because he has a high order of intellectual ability, the choice of what to do with this ability is often especially difficult. Or the gifted person may have both intellectual and artistic talent, and must choose between becoming an artist and becoming a lawyer, doctor, or businessman. The very abundance of talent may create difficulties the average person never experiences.

George Bernard Shaw went through a kind of identity crisis about the age of twenty. He had gone into business and was succeeding very well for a young man. Writing autobiographically, he has described how he determined to break loose from

*In this discussion we are indebted to Erik H. Erikson, "The Problem of Ego Identity," *Journal of the American Psychoanalytic Association*, IV, (1956), 56-121.

an occupation in which he found, to his dismay, that he was making good in spite of himself. He determined to become a writer. Breaking loose from his former life meant leaving family and friends, business and Ireland, in order to avoid the danger of a success unequal to "the enormity of my unconscious ambition," that is, success without identity.

Shaw settled down to study and to write as he pleased, and he forced himself to write something regularly every day for five years, during which time he produced five novels. Thus Shaw began the achievement of his identity, which was indeed a complicated process. As he says,

It was complicated by a deeper strangeness which has made me all my life a sojourner on this planet rather than a native of it. Whether it be that I was born mad or a little too sane, my kingdom was not of this world; I was at home only in the realm of my imagination, and at my ease only with the mighty dead. Therefore, I had to become an actor, and create for myself a fantastic personality fit and apt for dealing with men, and adaptable to the various parts I had to play as author, journalist, orator, politician, committee man, man of the world and so forth.¹⁹

So the gifted adolescent may find his task of identity formation plagued by the dilemma of too many ways to turn, too many identities to choose from, all of them almost equally appealing.

Terman and Oden discovered this to be a problem for some of the gifted children whom they studied, a group who generally surpassed 140 I.Q. Studying these people after they had grown up, they say, "We have found a considerable number of men in the gifted group who seemed to have no genuine interest in any particular vocation, and whose employment records indicated that they were drifters."²¹ They rated the men in their gifted group on occupational achievement and then compared the 150 more successful with the 150 less successful. Among the 150 more successful men, 75 per cent said their occupations had been "definitely chosen," not "drifted into." On the other hand,

¹⁹ George Bernard Shaw, *Selected Prose* (New York: Dodd, Mead & Co., 1952), p. 53.

²¹ *The Gifted Child Grows Up*, p. 325.

only 31 per cent of the less successful said that they had "definitely chosen" their occupations.

SELF-CONCEPT OF THE GIFTED CHILD

Young gifted children do not generally feel different from average children, but they act differently. Their talents make unusual performance come easily to them. They may not understand why other children cannot perform so easily. Later, as they move into middle childhood and adolescence, they become aware of their social differences from others their age.

John Stuart Mill, who was reading Greek at the age of three, was unaware of himself as a prodigy. In his autobiography he attributed this to the fact that he was taught by his father and had little opportunity to compare himself with other children. He writes:

One of the evils most liable to attend on any sort of early proficiency, and which often fatally blights its promise, my father most anxiously guarded against. This was self-conceit. He kept me, with extreme vigilance, out of the way of hearing myself praised, or of being led to make self-flattering comparisons between myself and others. From his own intercourse with me I could derive none but a very humble opinion of myself; and the standard of comparison he always held up to me, was not what other people did, but what a man could and ought to do. He completely succeeded in preserving me from the sort of influences he so much dreaded. I was not at all aware that my attainments were anything unusual at my age. If I accidentally had my attention drawn to the fact that some other boy knew less than myself—which happened less often than might be imagined—I concluded, not that I knew much, but that he, for some reason or other, knew little, or that his knowledge was of a different kind from mine. My state of mind was not humility, but neither was it arrogance. I never thought of saying to myself, I am, or I can do, so and so. I neither estimated myself highly nor lowly: I did not estimate myself at all. If I thought anything about myself, it was that I was rather backward in my studies, since I always found myself so, in comparison with what my father expected from me. I assert this with confidence, though it was not the impression of various persons who saw me in my childhood. They as I have since found, thought me greatly and disagreeably self-conceited,

probably because I was disputatious, and did not scruple to give direct contradictions to things which I heard said. I suppose I acquired this bad habit from having been encouraged in an unusual degree to talk on matters beyond my age, and with grown persons, while I never had inculcated on me the usual respect for them. My father did not correct this ill-breeding and impertinence, probably from not being aware of it, for I was always too much in awe of him to be otherwise than extremely subdued and quiet in his presence. Yet with all this I had no notion of any superiority in myself; and well was it for me that I had not. . . .¹²

Norbert Wiener, too, was unaware of himself as a gifted child. About his learning to read by the age of three, he writes:

This is a development of doing rather than of reflection about doing; a spontaneous burgeoning of new talents and not the work of the child as his own self-conscious schoolmaster. It is a fact that in my case the beginnings of reading go back to an age not twice that of the beginnings of speech with many children, and that this is obscured by the fact that I was learning to read, not learning to think about reading. Later, when I went through my earlier school-books (at home under my parents' guidance), I learned some of the puzzling distinctions between capitals and small letters and script. I have memories only of the obstacles in my way, and not of the greater part of the task, which was accomplished spontaneously and unconsciously. I remember that the similarity between *i* and *f* puzzled me, and that in old-fashioned books there was a long *s* which looked curiously like an *f*. I remember the mechanical difficulty of writing, and that my best handwriting was and long remained below the acceptable standard of the class. As to arithmetic, I counted on my fingers and continued that long after it was regarded as unpermissible by the standards of my school classes. I was puzzled by such things as the axiom that *a* times *b* equals *b* times *a*, and I tried to clear this up by drawing a rectangle of points and turning them through a right angle. I was not particularly fast in learning my multiplication tables or, in fact, anything else that had to be learned by rote, although I had a good understanding of the principles of fairly complicated operations from a very early period in my early childhood. I remember the old Wentworth Arithmetic, in which I read ahead into the discussion of fractions and decimals without any great difficulty. In general the two things that held me up were

¹² Mill, *Autobiography*, p. 19.

at the opposite ends of the game: the technique of adding and multiplying rapidly and precisely and the understanding of why the various laws of arithmetic, the commutative and the associative and the distributive, were true. On the one hand, my understanding of the subject was too fast for my manipulation, and on the other hand, my demands in the nature of fundamentals went too far for the explanations of a book devoted to manipulation. But if we go beyond that to the very first beginnings of my arithmetic, they are nearly as hard for me to recall as the beginnings of my reading or speaking.

This relegation of the difficult and the truly intellectual part of my work to a level below full consciousness is not merely a matter of my childhood, but something that has continued to the present day. I do not fully know how I get new ideas or how I resolve the apparent contradictions between those already in my mind. I do know that when I think, my ideas are my masters rather than my servants, and that if they resolve themselves at all into a usable and understandable pattern, they do that at a level of consciousness so low that much of it happens in my sleep. I shall have to speak of this elsewhere, but I cannot find in my own intellectual history any brusque change between the striving of childhood after childish knowledge and the power and the striving of my grown life after the new and the unknown. I know more and I have better tools, but it would often be hard for me to say just when and how I acquired these tools and this new knowledge.¹³

Wiener entered Harvard College at the age of twelve, and by this time he was feeling acutely his dilemma of talent versus immaturity:

I was not so much a mixture of child and man as wholly a child for purposes of companionship and nearly completely a man for purposes of study. Both my playmates and the college students were aware of this. My playmates accepted me as a child with them, although I might have been a slightly incomprehensible child, while my fellow students were willing to allow me to participate in their bull sessions if I wasn't too loud and too insistent. I was homesick for the earlier days when I had had a wealth of playmates in Cambridge.¹⁴

¹³ *Ex-Prodigy*, pp. 45-46.

¹⁴ *Ibid.*, p. 106.

By the time they reach the age of eight or nine, children with extraordinary talent or intellect usually become aware that they are different. When they fail to recognize their difference, they make naive mistakes of assuming that everyone is like them and understands them. Yet, if they feel and act differently, they may be ostracized by their agemates. The dilemma of such a child is seen in the following brief case history reported by Hollingworth:

Child C is a boy, born June 15, 1913. He was brought to attention by the principal of the public school which he had attended. The principal wrote as follows: "I have in the 5B grade of this school a boy who seems to be somewhat of an infant prodigy. His verbal memory, especially, is phenomenal, but he is underdeveloped on the physical side, takes no interest in manual work, and does not like to play with other children." C was thus referred for mental examination when he was 9 years 3 months old. His mental age was found to be 17 years 7 months yielding an IQ of 190 (Stanford-Binet). He was then in grade 5B, working with children of a median mental age of about 10 years.

C was recognized as "out of the ordinary" by his teachers, but they did not perceive clearly just how he deviated from the usual. Some thought him merely "queer" or "odd." In spite of perfect work, he had been advanced at only a little more than the usual rate. The principal of the school was especially concerned because he seemed completely out of social contact with other pupils. He never joined in their games, and they never seemed to notice him. He spent his spare time sitting at his desk and reading. When he was transferred to a special class for gifted children, where the median IQ was 164, he soon began to make social contacts with the pupils, and during the subsequent three years he was elected by them to many posts of trust and honor. "C knows everything," they said, and "C will make us behave."

At the age of 10 years, C was judged by teachers to be fully prepared in knowledge to enter senior high school, but he voluntarily remained to graduate with the other pupils of the special class. He therefore finished elementary school aged 12 years 0 month, being chosen valedictorian of his class. There is no doubt that he could have been made ready to enter college at this age.²⁸

²⁸ Leta S. Hollingworth, *Gifted Children: Their Nature and Nurture* (New York: Macmillan Co., 1926), pp. 251-56.

EDUCATIONAL POLICY FOR THE EXTREMELY GIFTED CHILD

For the first-order gifted child the educator should help the parents to work out a program which provides separately for intellectual development and for social development. For such children it seems impossible to provide both adequate intellectual stimulation and a wholesome social environment in one age group. In intellectual pursuits the child can be with youth much older than he, while in social relations he should be with children near his own age. For the best results in all-round development it appears that gifted children should be encouraged to play and to associate with children not more than a year or two older than they are. Norbert Wiener has memories of the pleasure of playing with children his own age—possibly the most pleasant of his childhood memories.

I took a sufficient part in the sports of the children of my age. I helped to make snow forts for snowball battles, as well as the snow prisons in which we immured our captives and in which I occasionally got immured myself. I jumped on behind the delivery sleight or "pungs" which traversed the yellow slush-covered streets of the winter Cambridge of those days. I scaled the back fences with the best of them, and ruined my clothes when I fell off. I tried to skate on a child's double-runner skates, but my ankles were weak and lax, and I never graduated to the more efficient single runners. I coasted down Avon Hill Street and would try to persuade my seniors and betters to give me a ride on their swifter double-runner sleds. In the spring I searched the pavements and the yards for little pebbles which I could grind up with spittle to make a crude sort of paint, and I would chalk the pavements to make hop-scotch courts on which my comrades and I could play. I walked over to North Cambridge to get comic valentines or Christmas cards from the stationery shops, according to the time of year, as well as cheap candies and the other delightful trifles of extreme youth.¹⁸

Later, his family moved to a country town, and he entered high school when he was ten years old.

Although I could recite my lessons as well as most of the older pupils, and although my sight translations from the Latin were rea-

¹⁸ *Ex-Prodigy*, p. 80.

sonably acceptable, I was socially an undeveloped child. I had not attended school since I had gone to the Peabody School in Cambridge at the age of eight, and I had never attended school regularly. Now at the Ayer high school the seats were much too big for me and my adolescent fellow students seemed to me already full adults. I know that Miss Leavitt tried to relieve me from the alarm of being in this unfamiliar place among unfamiliar figures, and on one occasion during my first few months at school, she took me on her lap during a recitation of the class. This kind act did not lead to any outburst of laughter or ridicule by the class, who seemed to consider me as the equivalent of their kid bothers. It was quite natural for a friendly teacher to take such a child on her lap when he visited the high school.

Of course, such treatment was in the long run incompatible with the proper discipline of the school, and before long I had learned the elements of schoolroom behavior. The discrepancy between my age and that of my classmates continued to protect me from their ridicule. I think this would have been less true had I been only four years younger than they rather than seven. They viewed me socially as an eccentric child, not an under-age adolescent. Hence, it was fortunate that the school shared a building with what would now be called a junior high school, where I was able to find some playmates among eleven and twelve-year-olds, some of whom were the younger brothers of my classmates. . . .

I often spent the afternoon with Frank Brown. He was a boy of my age, the son of the local druggist and the nephew of Miss Leavitt, and he became a lifelong friend. We lived only two miles apart, so that it was not difficult for me to play with him after school or to walk out to see him on Saturdays and Sundays. His family looked favorably upon our acquaintanceship, and I have always considered them among my dearest friends.

Frank and I used to punt our boat from the pond up by the side of the old seventeenth-century mill dam into the brook and work it over stones and shallows until we came into a dark tunnel in the bushes, which led in a mile or two to a back road to Harvard Center. We would imagine all sorts of weird possibilities in an old slough in the woods. We poked sticks into it to see the bubbles of marsh gas rise and burst. We captured frogs and tadpoles in the pond and tried to make pets of these unappreciative and refractory animals.

Once I burned the skin off the back of Frank's hand when we

tried to make firecrackers out of material snatched from his father's drugstore. On another occasion we loaded up a tire pump with water and lay in wait on the piazza to spray one of the early motorcars of that remote epoch. We assembled old cartons and carriage wheels into a ramshackle toy train and played railway man. And sometimes we went up to the attic, where we spent part of our time reading *Treasure Island* or *Black Beauty* and part of our time assembling bits of electrical apparatus to make an electrical bell. We once assembled something we conceived to be a wireless. We were boys as boys always have been and as boys will always be. Certainly I was neither particularly oppressed nor particularly impressed by my unusual school status at this age.¹⁷

Whenever talent is non-intellectual, as in the case of musical, artistic, and dramatic talent, the problem is less, because it is taken for granted that the artistically talented child should be given training that takes him outside his age group, while for his social development he should be placed with his own age.

A satisfying experience with family and with friends in the childhood years is generally considered to be essential to deep and abiding emotional security in the whole life. The intimate family circle may supply most of what is needed, particularly if there are several children and if the parents give the child a great deal of attention. The family is supplemented in an important way in American society by childhood friends, with whom the child spends much of his time and to whom he feels closely related.

If the highly talented child is treated by his parents as too "intelligent" to be given the warm affection they might give an ordinary child, and if he is thrown for his schooling with boys and girls so much more mature than he that he cannot be accepted by them as an intimate friend, and if he makes no close friends of his own age, he is likely to become an isolated, insecure, and unhappy person.

SCHOOL AND ACHIEVEMENT OF IDENTITY

For the dilemma of the several identities from which to choose there seems to be no educational solution, but the youth can

¹⁷ *Ibid.*, pp. 93-95.

be assured that he can choose among several desirable ones. Though it may be a difficult choice, the choice is almost certain to turn out well. Complexity is a penalty of genius but also an adventure. The gifted youth needs the assurance from teachers and parents that he has a fine future ahead of him and that he is justified in taking his time to achieve his identity.

Some talented youth will achieve identity early, particularly if their talent is artistic and not complicated by an intellectual talent of equally high order. Those with both intellectual and artistic talent, and those with a broad intellectual talent, may take more time deciding what to make of themselves. It is best for them to get a variety of working experience and to be placed on their own responsibility as early at least as average children are. Norbert Wiener describes his identity problem; he had started to study biology, then shifted to philosophy, and finally to mathematics:

Before I could take my full place as a mature scholar in the world it was necessary for some of the special conditioning which made me to a certain extent an object of show to be replaced by a basis of general experience which must ultimately come to every boy in his teens. I had to learn to study away from the example of my dominating father, and to regulate my affairs among people to whom my record as an infant prodigy meant exactly nothing. I had to become a reasonably competent teacher and to know my assets and limitations in that field. I had to get my hands black in an industrial laboratory and to acquire the satisfaction of working with tools as a member of an active team of men. I had to find out that writing for a living is not done by fits and starts but is a disciplined act which must be repeated for so many hours each day. It was necessary that I should come to see that mathematics was something that dealt with actual numbers and measurements found by observation, and that the results of this mathematics were subject to a critical scrutiny for their accuracy and applicability. And, because I came to maturity in a generation of war, I had to have the knowledge in my own person of what it meant to be a soldier, if not a warrior.

In the career of the average scholar, many of these lessons are learned in the teens and are followed by a period in the twenties when quite as rapid progress is made as I made at an earlier age. This is the more normal procedure and there is much to be said for it. But

I hesitate to pronounce dogmatically whether it is better or worse than the alternative procedure which I followed. On the one hand, there have been social difficulties in my nature which not even my belated professional career has eliminated. On the other hand, in this varied period of manifold experiences, my eyes were already open so that I could see and classify and organize in terms of some central principles the mass of individual items that came to my attention. I could come very near the boast that not one of these seemingly desultory years of finding myself was wasted, and that I have integrated them all into a later career centering about a few highly organized principles.¹⁸

There is here a suggestion, which is supported by a great deal of knowledge about gifted children, that parents sometimes throw obstacles in the way of their children's achievement of identity by overdominating them when they are young and by retaining this dominant relationship well into the early adulthood of the youth. That parents of gifted children might do this is understandable, for they must feel highly responsible for the development of the precious gifts they find in their children, and this may lead them to be more solicitous and more dominating than they would be toward average children.

The school is less likely than the parents to cause difficulties in achieving identity. School and college counselors may act in a more relaxed manner and allow their students to make choices and change them several times without becoming upset. The school staff might well advise parents of gifted children in this respect.

SCHOOL AND PERSONALITY ADJUSTMENT

For the dilemma of talent versus personality adjustment some sort of constructive compromise is always possible. The extreme of individual talent development leading to social alienation and maladjustment is not necessary, nor is the other extreme of bland social adjustment with stultification of talent. The procedure followed by a resourceful school staff in working out such a compromise is illustrated by the case of J. M., reported by Hollingworth:

¹⁸ *Ibid.*, pp. 293-94.

J.M. at 10 years of age, had an IQ of 190. She entered 1st grade in the Chicago schools when she was 6 years of age. The teacher of the first grade immediately discovered that she knew too much for that grade and had her placed in the 2nd grade. In June, at the end of the second grade, her reading was up to 5th grade standard and she was allowed to progress up to the 5th grade during the following year. She finished the 6th grade work while she was 9 years old. At this time she was a pupil in the Winnetka Public Schools and her further experience is recorded as follows by Carleton Washburne.

"In spite of the fact that she was so clearly ready for seventh-grade work in the fall of 1922, we hesitated about having her come from the lower grade school to our junior high school. She was smaller and younger than any of the children in the junior high, and we felt that she was already so far advanced that still more progress was perhaps undesirable. But she had formed a warm attachment for two girls a year or so older than herself, both possessed of high IQ's, and she felt that there would be nothing for her to do in the sixth grade, if we held her back. This was so obviously true that we admitted her to the junior high school with an agreement that she would remain there until she was twelve years old.

"We felt that while she doubtless could do the work of the junior high school within a year, or at the most in a year and a half, since our junior high contains only the seventh and eighth grades, she ought not to go to the senior high school too young. We agreed to give her a widely enriched curriculum of electives and special courses, to keep her active and happy for three years. But it didn't work!

"When she found that no effort on her part would get her through any sooner, she stopped making effort. The end of the first year (June, 1923) found her with 7th grade cooking, 7th grade art, and 7th grade pottery, all incomplete. She had taken up general science toward the end of the year and of course had not finished it either. She had, on the other hand, completed all of the 7th grade English and arithmetic, including some advanced work; and had done exceptionally well in French. In dramatics, she first had a know-it-all attitude, owing to her mother's success in amateur theatricals, but later did very good work. In social studies she had been inclined to superficiality, trusting to her quick grasp on a single reading of the material (Rugg's Social Sciences Pamphlets) and doing little real thinking. But she was interested, and finished the course within the year.

to help him accomplish these tasks better, and avoid the temptation to encourage him to compensate for poor achievement of social and physical tasks by overperformance on the intellectual tasks.

4. At the same time, avoid the opposite evil of holding the child back in his talent area for the sake of making him a better companion for people his own age.

5. When the gifted child reaches adolescence, recognize that a major problem for him may be that of achieving his own identity, because he is such a complex person and cannot be content with a simple identity.

In the reports of cases of extremely gifted children the difficulties and the errors can nearly all be traced to failure on the part of family and school to carry through some or all of these elements. For instance, in the third volume of the *Genetic Studies of Genius*, entitled *The Promise of Youth*, Terman and his colleagues cite a number of cases of gifted children, including several girls, who at the close of adolescence were apparently making a good social adjustment mainly because the family and the school conspired to hold back the intellectual development of the girls. The girls were losing their intellectual interest, in return for a good social adjustment.

In the same book are several other cases of youth with I.Q. 160 or above who had become quite seclusive and solitary but had pushed ahead with their intellectual development. As we read the case reports, we conclude that school and family, working together, might have given both groups of children a better balanced development that would have preserved or enhanced their mental performance in later life.

QUESTIONS FOR STUDY AND DISCUSSION

1. There seems to be some disagreement between Leta Stetter Hollingworth, on the one hand, and L. M. Terman and Gertrude Hildreth, on the other, about the personal adjustment of highly gifted children. Look up what these people actually said and see what the disagreement, if it exists, is about.

2. Granted that the child of I.Q. 180 or more is likely to have difficulties of personal adjustment, do you think that the child with an equally remarkable musical or dramatic talent and an I.Q. in the

top 10 per cent, but not in the top 1 per cent, is so likely to have adjustment problems?

3. Discuss one of the cases cited in this chapter, and tell how you, as a school principal might have done a better job than was actually done for this child.

4. Discuss the pros and cons of giving an extremely gifted child an education entirely by tutors, while finding playmates of the same age for him.

5. Discuss the pros and cons of setting up, in a metropolitan area, a school for extraordinarily gifted children; for example, for children with I.Q. above 150, or for children in the top half of 1 per cent of the I.Q. distribution.

6. Read the life story of a musical or artistic genius and describe his childhood development.

The Family and Use of Community Resources

This chapter is addressed to parents who wish to do everything they can to develop the talents that their children possess. A parent does not need to be absolutely sure that his child is a genius or that he has unusual ability in order to do something about the development of the child's talent in the home. The important thing is to provide good atmosphere in the home, adequate facilities, and encouragement of the development of whatever talent children may have.

A good family situation for gifted children is similar in many respects to that which is good for any child. Gifted children have the same basic needs as other children. What is done to stimulate talent in children who are recognized as being gifted is also good for children whose talent is not so unusual. This chapter, then, will deal with conditions that are designed to stimulate development of talent in the home.

PARENTS' KNOWLEDGE OF THEIR CHILDREN'S ABILITIES

On the whole, it is desirable for parents to know and understand the abilities of their children. The schools should, therefore, inform them of the results of standardized tests and observations. When parents accept these results and take them into account in the rearing of their children, the children stand a good chance

of benefiting. The attitude of parents toward children's abilities is a crucial factor in the development of the gifted child. It sometimes happens, however, that parents seize on this knowledge for their own aggrandizement. Children then can be harmed.

The question of whether or not a child is gifted often cannot be settled in any one month or even in any single year. Parents should keep an open mind over a period of time and should consider the opinions of many other people, especially teachers, as well as their own. Parents are in the best position to make a long-range study of their child.

One thing that parents can observe better than anyone else is intellectual precociousness, that is, the early evidence of mental ability. Various kinds of precociousness should be noted. One kind is the use of words and language: Does the child talk fluently before eighteen months of age? Does he use whole sentences early? Does he read spontaneously before reaching school age? These are clues to giftedness.

Another kind of precociousness appears in a child's evident interests. For example, is the child interested in artistic materials, in musical instruments, in dramatics? Does he show an interest in letters, clocks, calendars, and numbers at an early age? Such strong interests may be as important clues to giftedness as actual performance.

Parents can also observe the ability of the child to remember events and facts. This does not necessarily mean remembering the parent's commands or instructions, but remembering things he has heard read or discussed, what he has seen, or what he hears in a casual way. This ability is another important clue to giftedness.

Again, a word of caution is in order. There are vast individual differences in children. Absence of these clues in a child does not automatically rule out the possibility of unusual ability. Many factors can interfere with the early display of ability. Some gifted children are "late bloomers," so to speak. They may not talk until relatively late, but when they do, they use whole sentences. They may not learn to read with much facility until late in childhood and yet develop into very able adults.

On the other hand, parents must be cautioned not to magnify the abilities of their child while remaining blind to their weaknesses. Such distortion may arise from the parents' overpowering inner needs for achievement and success and their desire to make their children shine so that they may share the reflected glory.

The best equilibrium is attained when parents know and understand their child's individual patterns of abilities and disabilities but are not concerned with how their child's abilities compare with those of other children. For instance, it is more important for parents to know that Johnny's strong points are intellectual and musical ability and that he does not seem to have many practical skills, than it is for them to know that he is a smarter lad or a better fiddler than the Jones's boy.

STIMULATING THOUGHT AND CREATIVITY

One of the most helpful things parents can do to stimulate the minds of gifted children is to make thinking fun for them: to make a pleasure out of solving problems, to develop their curiosity, and to help them build up a fund of information about many things. There are numerous ways of doing this. But spontaneity is important. Learning should be approached in the spirit of a game that parents and children enjoy together.

One morning, for instance, a father at breakfast asked his three-and-a-half-year-old daughter, "If I give Mommy three of my grapes, and you give her two of yours, how many grapes will she have?" After a short pause, the girl came up with the right answer which they immediately verified by counting out the grapes and giving them to the mother. Adding and subtracting came to be as much fun for her as any game could be.

Thinking games in which the whole family participates are excellent devices. Crossword puzzles, "Twenty Questions," "Who Am I?" and rhyming word games can be played almost any time, anywhere. One family with young children made driving through big cities a game by finding consecutive letters of the alphabet in the signs along the store fronts on the street. Games such as checkers, chess, anagrams, "Scrabble," and the like also stimulate children's minds.

Young children love to make collections, and therein lies

Parents can do much to kindle the spark of creative thinking in their children. One family played a game of "Improvement" at the dinner table. Each member was given a turn to ask how some object could be improved. The rest of the family then took turns answering the questions. One of the youngsters asked, "How can clocks be improved?" One of the others answered, "They should be made so that when you press a button the clock says the time." The same family played a game of "New Uses" by asking in what new ways familiar objects could be used.

Reading is another source of mental and cultural stimulation to children as young as nursery age. Not only does it increase the child's fund of knowledge, but it sows the seed for creative writing that follows later. It is important for parents to read to their children; it is also important for children to read to parents. One mother read a story to her seven-year-old daughter at bedtime and listened to her daughter read to her at noon. By showing an interest in the children's reading development, parents support one of the most important aspects of the mental development and school achievement of their children.

Children can easily be stimulated to build their own libraries if parents, too, are interested in books. Nothing more elaborate than a brightly painted orange crate will get them started. Children's books can be bought "for a song." Gifts of books from the parents will increase the size of their libraries and communicate to them the value the parents place on books.

Traveling in and about the community and vacation trips around the country are also important ways to stimulate gifted children. The value of such activity can be enhanced if the trips are planned beforehand with the children so that they, too, are given a voice in deciding where to go, what to see, and how to occupy their time. Planning can be a source of some informal research in magazines, such as the *National Geographic*, travel magazines, and the like. Information about the places to be visited can be gathered from local and state chambers of commerce. The followup is also important. Reliving the trip with the children afterward through such activities as mounting photographs, writing captions for them, or classifying colored slides

taken on the trip can reinforce the things learned. In planning a trip, it is important to *emphasize getting to know people and seeing places of historical significance and places of beauty.*

Rewarding intellectual activity, making thinking fun, is one of the surest ways parents can find of helping unfold the potential thinking ability in their children. The best reward for children is to have mother and father take part in the activities with them, not as bystanders or referees, but as participants in the activity, *as members of the group.*

Parents can develop a personal interest in what their children are studying in school. School subjects may generate a family or joint project, which can, in turn, add to the academic motivation of the children. Parents do well also to become personally acquainted with teachers, counselors, and principals who deal with their children. Educators often have ideas that parents can use to help the children develop their talents.

Interest in intellectual and academic matters in the home helps the child dovetail his home and social life. One sixth-grade girl, for example, was raised in a home in which the mother had spent a good deal of time reading to the children even before they started school. The mother, since she was talented musically, also taught the children to play various kinds of instruments. She took them to the library and encouraged them to read. The family also developed its own library. As a result, the girl lived in a unified environment where her school and home activities supported each other.

Contrast this with the home life of Bob. Bob's father was a salesman who had little interest in academic matters. There were very few books and magazines in the home. The father encouraged the boy to make a collection of stones and to classify them. This was about the only activity in which the boy engaged that was related to his schoolwork. The rest of the time he went fishing, played ball, and tended to his business of selling papers.

These two illustrations suggest that the life of a girl outside of school is generally easier to shape in terms of school objectives than is the life of a boy. Home and extracurricular activities *for young boys tend to distract them from schoolwork* rather than to support academic activities.

STIMULATING CREATIVE ACTIVITIES IN CHILDREN

Spontaneity and freedom are the keys that unlock creative activities in the home. Creative activities are those in which the child expresses his own unique experiences. Story-telling, art, music, acting, and writing are important avenues of expression for children. The experiences that are important to them are the things that happen every day to them in their homes, neighborhoods, and schools.

Art.—Mrs. B. had a simple technique for encouraging children to express themselves in artwork. She simply asked them to tell what had happened to them during the day. As they began to talk about it, she slipped a crayon to them and asked them to draw a picture of it. "What were you and Jimmy building in the back yard, Sammy?" she asked her boy one day. Sammy described the tree house he was making, using much waving of arms and motions of hands as he talked. "I can almost see what it's like. Why don't you draw a picture for me of how you pounded that board?" With a little more encouragement and discussion Sammy transferred his afternoon's building experience to paper.

Art is one of the first mediums of creative expression that can be used by children. In order to nourish artistic talent, parents should be sure there are plenty of art materials on hand. One afternoon friend Jimmy came to Sammy's house. Seeing the stack of paper on the shelf, he asked in amazement, "Wow! Can we use all that?"

"Sure," said Sammy. "Mom lets us draw all we want."

"C'mon, let's get going then." And they spent the rest of the afternoon busily drawing and painting. Materials by themselves will not create talent; but without them it is hard to see how talent can be developed.

Large-sized newsprint can be purchased cheaply by the ream. Hefty crayons are especially good in small hands. With the paper removed, they can be used on their sides as well as on the point. Paints, clay, finger paints, and charcoal are also important art supplies.

Music.—This, too, is an avenue of expression of experience

for children. Some children voluntarily spend hours practicing a musical instrument because of the satisfaction they get out of it. Musical ability is often manifested when a child is as young as three. Parents should give early training themselves if they are qualified.

The important factor in shaping children's attitudes toward music and their musical abilities is how wholeheartedly parents incorporate music into family living. Unfortunately, most family music today consists of listening rather than of participation. When the parents are not musical performers, music is not likely to be emphasized. Many parents, however, do participate in music along with their children. One family, for instance, sang in opera-like style while doing the dishes. Other parents expose their youngsters to good music, discuss it with them, and learn with their children to appreciate and love fine music.

Story-telling.—A two-and-a-half-year-old girl told the following story to her mother:

"Once upon a days there was a rabbit. Along came a squirrel. Rabbit said to the squirrel, 'Go-o-away from him.' Squirrel said, 'Don't you see a boy shooting his gun?' Just one boy. They weren't scared at that boy. The boy shooted his clay out of his gun at the squirrel."

"Did it hurt the squirrel?" her mother asked.

"Yes, it hurt his hand. Then the boy got a knife and tried to cut squirrel's head off. But he didn't. Then I held the rabbit on my lap and the rabbit went to sleep in my arms."

The mother wrote the story that the little girl told. She was delighted with her first "publication."

Children tell such stories spontaneously if they are encouraged but not pushed to do so. Hours of reading to children at bedtime and naptime may be needed to prime the pump. Parents themselves can participate in story-telling, inventing their own tales. Parents are often reluctant to put themselves out in this way because they may feel that they cannot do it well. But there is probably no one so appreciative of their efforts and so uncritical of the results as their own children. A tape recorder, if available, motivates children to tell stories. They love to hear themselves.

Animals, animated machines, and children are a child's favorite characters. Any kind of mischief will do for a plot. Making an adult look slightly silly adds zest. This is the stuff from which the children's own creative writing later grows.

Writing letters is closely related to story-telling. Grandparents always love to hear from their grandchildren. If the father travels a good deal, letters written to him by the children will help bind the family together. Fathers who will take the time to write personal letters to their children can influence their children even while they are absent from them. Stories written and illustrated by fathers, even with the most inept scrawling, will find an appreciative audience in their children.

Acting and dramatics.—These activities provide wonderful opportunities for encouraging spontaneity in children. Parents have tremendous opportunities here to help their dramatically talented youngsters. Acting can develop from story-telling or from books that are being read to children. Parts of stories can be acted out spontaneously, with the children and parents participating. Story-telling can also be woven into acting, with children creating their own stories as they go along.

Hand puppets, marionettes, and even paper dolls can provide the occasion and characters for creative acting.

Dancing and rhythm.—These activities are closely allied to musical activity and dramatic activities. A rhythm band can be easily organized, not only with the children in the family, but with the neighbor children as well. They can march around the house to the mother's piano playing or to a record player. Sticks, old pans, pot-covers, and combs may serve as instruments for the marchers. The rhythm band is a way for children to release a good deal of high-pressure steam. It is an easy step to move from this activity into a make-believe circus or zoo, thereby opening new worlds of creative activity for children. Such activities, when planned and shared by adults, are not as unnerving as might at first be expected.

Practical skills.—Parents have the opportunity to provide the foundations for manual skills in their children. One of the important aspects of the father's activity in constructing things and working with tools is the role in which it places him in the eyes

of his sons. All too often in American life the primary contact the father has with his children is in play activities in which he essentially enters the child's world. In activities such as constructing things, however, the order is reversed. The child enters the adult world. A teaching-learning situation is created in which the father leads the way, teaching the youngster new skills in working with his hands. The mother, too, has opportunities to teach in such activities as sewing, cooking, and interior decorating. These practical arts add to the well-rounded development of gifted children.

The family is in a good position to broaden the children's experiences. The problem of motivating children to want to try a variety of stimulating activities is less acute in the family than anywhere else, since young children will usually gladly follow the lead of their parents. A large number of toys that stimulate creative and constructive activities in children are available. There are no substitutes, however, for active creative endeavors in which the whole family participates.

Families can also deepen the children's experience, particularly if the parents have well-developed hobbies or interests of their own. They can truly educate their children by teaching them their own skills.

Furthermore, by providing a stimulating environment for children in the home, parents give themselves the best opportunities to observe the strengths and abilities of their children. It is practically impossible for parents to do more than guess at a child's ability unless they provide sufficient opportunities for him to display his abilities along many lines. Every child should have an opportunity to explore and try out for himself a wide variety of experiences to help him and his parents discover his abilities and preferences.

PROVISIONS FOR GOOD FACILITIES FOR STUDY AND CREATIVE ACTIVITIES¹

One of the best ways for parents to help their talented children is by providing home facilities that are conducive to study and

¹Material in the rest of the chapter is adapted partly from Robert F. DeHaan, *Understanding and Helping Your Talented Son or Daughter*, Chicago: Science Research Associates, 1961.

creative activities. Provision of adequate study facilities becomes especially important as children grow into adolescence, and begin to have homework to do. Below are practical suggestions for developing such facilities.

1. Provide a study center in a separate room such as a bedroom or a screened corner in one of the main rooms of the house. The center should be reserved exclusively for study and academic activity. If the teenager has to clear off junior's half-finished models, or the young sister's doll clothes before he can begin to work, he may waste a good deal of time and consume a good deal of energy that could be better used in studying.

2. Provide centers for creative work. Children and young people need a quiet place for their creative work just as do adults. One family provided such a work center by blocking off a corner of the dining room with a screen. Behind the screen was an old easy-to-clean porcelain top table with legs that were cut down to children's height. Scissors, crayons, and a jar of paste were kept in a drawer. On the shelf was a stack of newspapers, water color paper, and construction paper. The work center was spacious enough so that children could invite their friends in for the afternoon. A piece of linoleum protected the floor and the mother's nerves as well. The center was strictly functional and served as a focal point for all the art work done by the children.

3. Provision of materials. Most families can provide a number of materials that children need for their creative activities. Art materials, and musical instruments are important. Children's books on science, fiction, and poetry and biography are practically indispensable. Encyclopedias provide an important resource for building up the fund of useful information. All families have cast-off materials or can acquire them easily from friends and relatives. Lumber yards have unused ends of lumber that are trash to them, but a treasure to a child. Other cast-off materials include old magazines, wallpaper books from paint stores, old clothes, pocketbooks, and the like. One rainy Sunday afternoon for instance, a mother sat down with her children and created a doll-sized park on the kitchen floor using pieces of scrap lumber from the basement. Tinker toys logs, cardboard cartons, and

pieces of wire. It was hard to say who was more thrilled, the children with their park, or the mother with her children.

4. Work out a study schedule that fits into the family schedule. Children can reasonably expect some time of quietness although this may be hard to manage if their studying must be done in one of the main rooms of the house. An hour after dinner each day is a good time to be set aside for studying; or a more extended period can be added immediately after the younger children are in bed. During the study time, TV should be turned off, and little brothers and sisters should be kept as quiet as possible.

One family developed a family study hour in which the whole family from the oldest high school boy to the youngest pre-schooler sat around the kitchen table and worked on their homework and various projects for an hour or so. This became a very satisfying family tradition to all the children.

5. Encourage concentrated study during the study time. Emphasize organization and good use of one's time as an important aspect of developing good study habits. Help the child work out a study schedule if necessary or suggest that he talk to his teacher, or school counselor if his habits are poor.

PROVIDING LOVE, UNDERSTANDING, AND ENCOURAGEMENT

Parental love is the basis for the personal security of children. Security, in turn, is one of the important foundations of satisfactory academic achievement. If a child feels that he is loved by his parents regardless of ability or disability he has the secure basis for accepting himself and working up to his capacity without having to divert energy into untangling his confused thoughts and feelings about his parents.

Encouragement from parents means more to children than encouragement from any other person. Some children say that the biggest thing their parents do for them is to encourage them. This encouragement gives the youngsters the confidence needed to prove their ability. Encouragement needs to be direct, simple, consistent, and genuine.

One of the fundamental responsibilities of parents is to understand the point of view of their children. Parents need to be able to look at the world through the eyes of the child and accept his view of it as the one in terms of which he lives and moves and has his being.

It sometimes happens that parents' views of what they are doing to and for their children do not coincide with what the child sees the parent doing. A study conducted at Portland, Oregon, sheds some light on the failure of parents to see their children's point of view.² The study indicates that boys who achieve well perceive their families as being more emotionally supportive than do boys who were underachieving. That is, high-achieving boys said their parents gave them more approval and trust, more affection, more understanding and encouragement, placed more emphasis on family sharing and were more permissive and less severe than did the boys who were not achieving well. The same study reveals, however, that parents of underachieving boys as well as parents of high achieving boys expressed approximately the same philosophy and values of child-rearing. Both groups of parents believed in showing affection, sharing, not being too restrictive, and so forth. It would appear that children respond to what a parent does more than to what he says. Therefore, it is important for parents to look at themselves through their children's eyes in order to assess correctly how healthy their relationship with their children actually is.

UNCONSCIOUS ASPECTS OF PARENT-CHILD RELATIONSHIPS

Parents may be unaware of many aspects of their relationship to their children. For instance, they often cannot describe how they show their love to their children. It is not something they think about, they simply do it. On the other hand, as has already been indicated, parents may be unaware of the effect that their critical, negative attitude has upon their children.

This lack of awareness is a matter of degree. Generally, it is

²William E. Morrow, *et al.*, "Family Relations of Bright High-Achieving and Underachieving High School Boys," Fulton Mo. State Hospital. (Mimeographed).

a sign of good mental health when parents are fully aware of their own motivations for their actions toward their children and the effect that these have on their children.

Some parents reject their children without knowing that they do so. Other parents exploit their children in order to satisfy and fill their own empty lives. Still other parents may play their children off against each other as foils in their own unhappy marriage. Any parent who feels uneasy about his own relationship to his child and suspects that there may be things going on under the surface of which he is not aware is well advised to talk to a professional person about his situation.

FAMILY ASPECTS OF ACADEMIC UNDERACHIEVEMENT

One way in which children react to psychological mishandling is through scholastic underachievement. Scholastic achievement is a sensitive barometer of the kinds of emotional pressures operating upon a child in his home.

The underachiever is generally defined as the pupil who ranks in the upper tenth or upper quarter in his class in terms of ability but whose course grades are average or below. In other words, there is a marked discrepancy between his scholastic aptitude as measured on standardized tests and his scholastic achievement as measured by school grades.

Parents may think of underachieving children in two major classes. The first class consists of children who are deficient in motivation but who have relatively easy social adjustment to their age-mates and to their teachers. Such children may lack intellectual stimulation. They may not understand the importance of schoolwork. College may not be an important part of their future plans. In general, such children can probably best be handled through better parental management. If their parents understand their ability and provide some of the intellectual and creative stimulation in the home, such children can generally develop adequate motivation.

A description of such an underachieving eighth grader is given by his mother. She says of him that he has enough ability to do good schoolwork, yet he is getting C's and D's. The mother noted how poorly he worked at home. He has very superficial

study habits and because he is a good reader he can do his work quickly, but he never digs into the material or tries to organize it. When his parents try to help him at home, he shrugs them off. He always says that he has his homework completed, but a month later the parents are likely to get a note from his teacher asking what has become of his overdue book reports.

This eighth-grade boy was helped when his father, who was a professional man, made it a point of studying with the boy. Together they set up a schedule and a place to study. As they worked together, the boy began to generate more interest in his studies. The father found that the boy actually did not know how to study or organize his time; he had to begin far back to help the boy develop the very simple study habits everyone thought he had mastered long ago. Management of the home problem helped the boy overcome his problem of deficient motivation.

A second class of underachieving children consists of those whose deficient motivation is the result of personality and social defects. Such children are maladjusted. Problems of children in this category often stem from the unrecognized needs of parents, as was mentioned in the earlier section.

The following letter from a mother illustrates some of the complicated factors that are involved in the lives of maladjusted underachieving, bright children. The letter went as follows:

DEAR SIR:

I would like to know more about eleven-year-old boys. My boy is five feet, five inches tall already. My problem is, I think he should have friends and he doesn't have any. He should do better in school too. He doesn't care either way. Yesterday I told him to call a boy so that they could ride their bikes to junior high school together. He said he would but didn't.

Last summer he went to a YMCA camp and liked it. Also, we went camping with friends of the family who have a son the same age as our son and they got along wonderfully. They were on the go all the time. This summer neighbor kids would come over, and he would play chess and checkers with one of them for an hour or so, and then he would make an excuse so that he could be alone. He was especially good or better at chess than other children. He would

sit around and watch TV all the time if I would let him, but I don't.

A friend of mine says he feels he can't compete with other kids, and that is why he doesn't want to play. Do you agree?

He has hayfever and allergies in the spring which make it hard for me to make him go outdoors and stay out. He likes to go exploring and so forth but that is out for him because of his allergies.

He is a very average student but teachers always say he is not working up to his ability. He doesn't care for sports and isn't good in the band either and I am wondering if I should keep him in so that he will at least be in something.

He is well liked in Sunday school and was president of the Young Peoples' Group. But of course, there isn't much competition there.

It's so hard to see him appear to be so lazy when our sixteen year old girl has lots of friends and is in the accelerated classes. Our youngest boy is an average student also and so it isn't that we compare him to the older girl all the time.

Thank you very much for your help.

Sincerely yours,
S. A.

Here is apparently an underachieving boy with many problems. They stem partly from his overgrowth which tends to drive him toward seclusion. Furthermore, he has a brilliant sister who is setting a pace he cannot match. Apparently the boy's father is a weak, minor figure in the family, at least, he is not even mentioned by the mother. The boy probably lacks an adequate male model in the home. He shows symptoms and the effects of his difficulties with allergies and hayfever. It is possible that his allergies stem in part from his psychological condition, as clinical psychologists have shown.

In spite of these difficulties, he appears to be getting along much better socially than his mother recognizes. When he is away from home or school, he appears to be the kind of boy his mother wants him to be. She fails to reward him for what he does well and even belittles his achievements. She appears to be unaware of her efforts to control him and is unaware of the effects that such efforts have on him. She has very definite standards of what he should be. Apparently the harder she pushes him to attain these standards, the more he resists them. He is

beginning to withdraw and show tendencies to avoid playmates.

Such a mother needs to examine her relationship with her boy and the effects of her actions upon him before she can expect him to achieve well in school and be an outgoing person. She needs to allow the boy "psychological life space" so that he can become the kind of boy he is capable of being.

A starting point for working with underachieving children may be for the father and mother together to try to gain insight into their relationship with their children. Such an assessment may be difficult and even painful, but it needs to be done and the sooner it is done, the better, preferably, before the child reaches teen age. Here are some questions that may start the process of insightful assessment.

1. When did I last spend time with my underachieving children doing the kinds of things that children like to do?

2. Have I shown them through my own behavior, the importance of doing a thing well, working independently, and excelling?

3. When have I sat down just to listen to the kinds of things my children have to talk about without telling them what to do?

4. When was the last time I gave them encouragement and affection and let them know I believed in them? When have I last let them know I trusted them and approve of the things they do?

5. Do I give my children reason to suppose that I am an old grouch, always nagging and scolding? How do they see me?

6. Have I pointed out to my children the value of education and encouraged them to study hard?

Answers to questions such as these and others that the parents may have may indicate the directions in which the parent's relationship with children should be expanded.

PREPARING FOR COLLEGE AND A CAREER

Parents should analyze with their adolescent son or daughter who is considering going to college the reason for higher education. Parents can help them develop and talk about their reasons for going, highlighting idealistic reasons such as the following:

1. To develop ability to think and use other talents which he may have. College work may reveal talents and interests of which he is

unaware. There is deep satisfaction in realizing one's full potential, and college is one of the best places to do this.

2. To join with the pioneering band of intellectuals who are opening up new realms of thought and knowledge just as pioneers in the past opened vast geographical territories. In doing so, one can contribute to the fund of new knowledge that is so necessary for the progress of society.

3. To put himself in position to serve. Parents should emphasize that the greater gifts of their talented youngsters not only offer personal satisfaction and better opportunities but also involve the obligation to serve.

The usual time to apply for admission to college is in the first part of the last year in high school. However, the goal of obtaining a college education should be set as early as the eighth or ninth grade. In some families, of course, children are destined for college from their earliest years.

For further help in selecting a college for children, parents should consult with the high school counselor. Counselors generally have books and other material describing a number of colleges that will be helpful to parents.*

In choosing a vocation, two basic dimensions for a young person to consider are his interests and capabilities on the one hand, and the kinds of opportunities that are open to him on the other.⁴

One of the problems of talented children is the embarrassment of riches described in an earlier chapter. They are interested in very many things and do many things well. For this reason, they should not be pushed prematurely into making a decision about a career and find later that they have excluded choices

*There is a good deal of excellent material to help parents with this problem. Here are a few books and booklets: *How to Get into College and Stay There* (Chicago: Science Research Associates, 1958. Another helpful booklet is "Making Plans for College?" *Changing Times*, Washington Editors, Inc., 1960. See also Homer D. Babbridge, Jr., Washington, D. C.: The Kiplinger "Student Financial Aid" Washington, D. C.: American Personnel and Guidance Association, 1960.

⁴Parents may find the following materials helpful in this connection: Lambert Gilles, *Charting Your Job Future*, Chicago: Science Research Associates, 1952 and *Your Future Is What You Make It*, New York: National Association of Manufacturers, 1949.

that may have been more suitable for them in the long run. This problem is related to the problem of self-identify which was described in the previous chapter. There is no need for talented youngsters to make a definite commitment to a specific vocation before finishing high school. College courses such as philosophy, sociology, psychology, and others may offer more appropriate career possibilities. His mind should not be prematurely closed to them by commitment to another career.

A general rule for parents to follow is to select a field of work but not a specific job. Many jobs and services are rapidly discarded or altered because of rapid technological changes. Hence, choosing a broad area of work is a suitable goal as a start. The broad area can be narrowed down to specific jobs as the student comes closer to the end of his formal educational training.

THE USE OF COMMUNITY RESOURCES FOR THE DEVELOPMENT OF TALENT

No parent can be all things to all of his children. Since children differ greatly in talent and temperament, and because most families have only limited resources, it is imperative for a parent to discover agencies outside the home that can assist in the development of his children's talents. Community institutions can extend the resources of the home.

The major agency in the community for the development of their talent is the school. It provides specialized education that cannot be provided by parents in our highly specialized society. The primary function of the school is the development of talent in children and whatever personal and social adjustment is needed to make the development of talent possible.

Other community institutions stand between the home and the school in educational functions in that some have greater resources than the home. These resources are not as specialized or as highly organized as the school, but the community can and should augment the talent-development program of the school and for providing facilities for the development of talents which are too specialized for the schools to develop.

The community already does this to a certain extent. The YMCA and YWCA, Scouts, 4-H, public libraries, community

sports programs, to name just a few, supplement the program of the school. Churches of the community give special religious instruction that is not possible in public schools. More emphasis, however, needs to be placed on community programs for talent development.

The use that the home makes of the school and other community agencies will also determine to a large extent how far a child goes in developing his talent and ability. Although agencies in the community are devoted to the development of talent, it is the responsibility of parents to use them. For example, most libraries are extremely interested in helping young children begin to read books. Getting the children to the library, however, is the responsibility of the parents. Showing an interest in books is also their responsibility. Again, it is the responsibility of the parents to build the bridge from the home to the church.

Adult friends with hobbies, friends who like children, and friends who will reinforce the values of the families are important in helping children want to develop their talents. What parents lack can often be made up by friends who are willing and able to perform some of the roles of the parents. For example, one father encouraged his son to go fishing and hunting because he himself was an outdoor man. But he was at a loss to help his son in the area of music, where the boy had real talent. A friend with musical ability provided the necessary encouragement.

Communities can probably improve the climate and facilities for developing talents of its junior citizens. A high degree of initiative and co-operation among individuals and institutions is called for. New organizations may need to be created in order to provide needed programs. In other cases, existing agencies can add new programs for talented children to existing programs.

SCIENCE SEMINAR

The Science Seminar of the Joe Berg Foundation for the Advancement of Science offers a program based in the community for the development of talent. A national office provides local assistance. The purpose of the seminar is to offer students of exceptionally high ability instruction in scientific concepts, meth-

ods, and applications that are more advanced, vigorous, and individualized than are offered under the regular curriculum of many high schools. Teachers, technologists and professional scientists of the community conduct the seminars. Help can be obtained from the foundation headquarters⁵ in the form of guides, suggestions, consultant help. The programs involve the following:

Presentation.—A meeting is planned for interested educators, members of the board of education, local industrial leaders, and other individuals. A representative of the foundation is available to explain the seminar at the meeting. Several communities may want to co-operate on an area basis in setting up a seminar.

Request for help.—If the community leaders agree on the general desirability of the seminar, a formal request for help in organizing it can be made to the Joe Berg Foundation by the proper school authorities. The foundation will supply an Operation Guide and Pattern Books representing successful experience of other groups. A planning or steering committee can be appointed to give initial impetus to the program.

Organization.—The planning committee needs to organize other committees such as the committee to recruit teachers for the seminar, admissions committee, facilities committee, public relations committee, and curriculum committee.

Selection of students.—The high school administrators and teachers select the most able and promising science students from its tenth and eleventh grades. They are invited to compete for admission to the seminar by taking one of the qualifying examinations supplied by the foundation. The examination is the National Science Talent Search Test.

High scorers on the examination are invited with their parents to attend a general orientation meeting in which the seminar program is described in detail. The student candidates are interviewed personally at the meeting. The testing, general orientation meeting, and interviewing is held in one day. The final decision on acceptance of the student is reached by parents and by the admissions committee.

⁵The Joe Berg Foundation for the Advancement of Science, 1712 South Michigan Avenue, Chicago 16, Illinois.

The seminar proper.—The Science Seminar meets for a two-and-a-half-hour session one evening each week throughout the calendar year. The activities of the students include work and study on such topics as the nature of scientific inquiry and proof, the principles of logic and critical thinking, the preparation and presentation of technical reports, the canons of designing experiments, the methods of research and statistical procedures.

Each seminar student settles on some hypothesis or closely related set of hypotheses suitable for scientific testing, designs an appropriate experimental procedure, and conducts the experiment during his senior year as a project in preparation for the *National Science Talent Search* competition. One or more members of the Science Seminar staff work with each student on his research project. The student with the guidance of the staff member selects his own research area.

The seminar staff.—The staff of instructors is obtained by invitation from technologists and research scientists in the community and renders its service without charge.

Limits of the seminar.—The seminar operates within the obligations, policies, and the educational philosophies of the school. However, in the selection of staff personnel, in the choice and organization of instructional materials and processes, and in the acquisition and utilization of laboratory supplies and equipment, the seminar is self-sufficient and self-directed.

A CHILDREN'S THEATER

In Quincy, Illinois, a children's theater was established through the work of the Community Little Theater, the Service League (an organization of women working for community improvement in a variety of fields), the Community Youth Development Commission, and several parents who were interested as individuals.

Over a period of four years the Children's Theater developed from an experiment into an established part of the cultural life of the community. The program was originally limited to the summer, but it was becoming a full year project at the close of the four-year cycle. To house the theater, an elementary school with a good stage was provided by the public schools.

For the first summer the group began preparations in the preceding winter. It was decided that instruction should be given in pantomiming, play-reading, stage craft, costuming, make-up, and production. A public production was to conclude the summer's work.

The steering committee decided to include two age levels, elementary school children, who would attend in the morning, and the high school pupils, who would go in the afternoon. Candidates for the project were selected by teachers in the appropriate grades, who were asked to nominate children displaying certain characteristics of dramatic ability.

Involvement of parents.—Letters were sent to parents of the children nominated by the teachers. They were invited to a meeting where the project was explained. They were also invited to volunteer for work on committees dealing with publicity, program and tickets, production, and costuming.

Finances.—A fee of \$10 per child was fixed, and scholarships were provided by local organizations for talented children whose parents could not readily pay this fee. The cost of the project was estimated at \$1,800, which was to be raised from fees, from sale of tickets for the play performances, and from contributions by interested individuals and organizations.

Direction.—A professionally trained director with experience in children's dramatics was employed for the summer session.

Program of the first two summers.—The first summer saw participation by 143 children. There was a general feeling of satisfaction, and the program was repeated in substantially the same form for a second summer, with 76 children taking part.

Organization of the Junior Theater.—On the basis of two years' experience, the Quincy Junior Theater was established, with a governing board consisting of representatives of five community organizations and others elected by the board.

It was decided to request the Park Board to finance the Children's Theater as part of its summer recreation program. The Park Board voted a sum of \$2,300 to support the program, with the understanding that membership was to be free to all and based solely on talent. The program was to serve 150 to 200 children, from third grade through high school.

After that the Children's Theater became a regular part of the Park Board program, supported by annual grants together with income from admissions to the public performances. It served between 150 and 200 children each year.

QUESTIONS FOR STUDY AND DISCUSSION

1. What can and does the home supply for gifted children?
2. What role do parents play in motivating children to achieve academically?
3. How can schools and the home work together to prepare adolescents for college?
4. What can parents do to stimulate the community to make more adequate provisions for the gifted?
5. How can parents stimulate creativity in the home?
6. Under what conditions do some parents reject or exploit their children? What are the results of rejection and exploitation in the lives of children?
7. What is the relationship between parents' aspirations for their children and the choice of career that children make?

Bibliography

This bibliography is a highly selected one for those who wish to have the most basic books and articles on the subject of educating gifted children. With the tremendous volume of publications now available, the problem becomes increasingly that of selecting the most significant material. This we have attempted to do. Those who wish to have a complete bibliography are referred to the section listing such published ones.

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